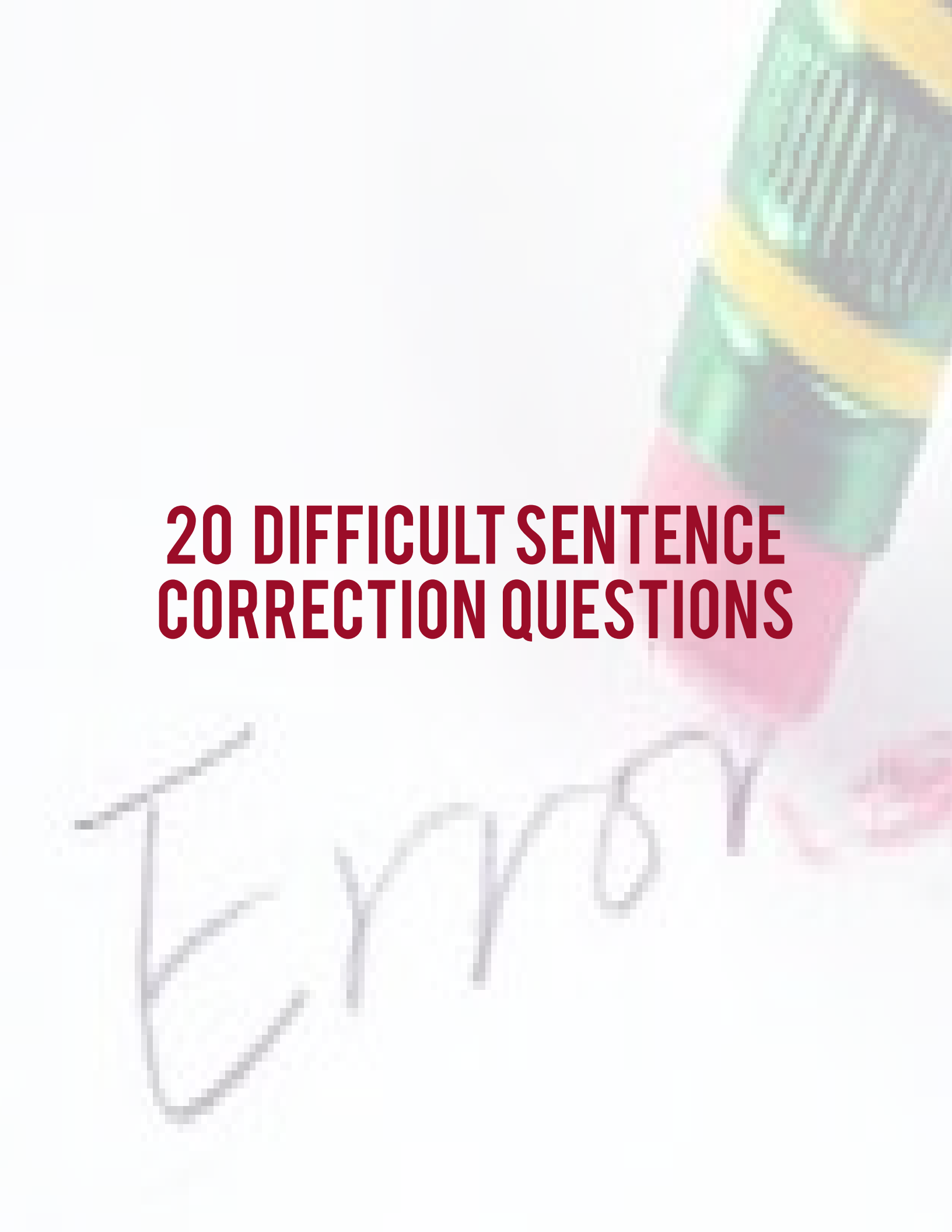




100 DIFFICULT GMAT QUESTIONS WITH DETAILED EXPLANATIONS





20 DIFFICULT SENTENCE CORRECTION QUESTIONS

1. When drive-ins were at the height of their popularity in the late 1950s, some 4,000 existed in the United States, but today there are less than one-quarter that many.

- A. there are less than one-quarter that many
- B. there are fewer than one-quarter as many
- C. there are fewer than one-quarter of that amount
- D. the number is less than one-quarter the amount
- E. it is less than one-quarter of that amount

2. Socially and environmentally responsible investing is on the rise: last year in the United States, over \$2 trillion was invested in funds that screen companies according to a variety of criteria such as adherence to labour standards, protection of the environment, and observance of human rights.

- A. according to a variety of criteria such as
- B. according to a variety of such criteria, as by
- C. according to such a variety of criteria as by
- D. in accordance with such a variety of criteria as
- E. in accordance with a variety of criteria, such as by

3. The discovery that Earth's inner core rotates independently of and more quickly than Earth's outer layers is responsible for advancing studies of the flow of heat from the inner through the outer planet and of the formation and periodic reversal in direction of Earth's magnetic field.

A. core rotates independently of and more quickly than Earth's outer layers is responsible for advancing studies of the flow of heat from the inner through the outer planet and of the formation and periodic reversal in direction of Earth's magnetic field

B. core rotates independently of and more quickly than Earth's outer layers is responsible for advancing studies of how heat from the inner core flows through the outer planet, and the formation and periodic reversal in direction of Earth's magnetic field

C. core rotates independently and more quickly than Earth's outer layers are responsible for advancing studies of how heat from the inner core flows through the outer planet, and how Earth's magnetic field forms and the periodic reversal of its direction

D. core, rotating independently and more quickly than Earth's outer layers, are responsible for advancing studies of the flow of heat from the inner through the outer planet, and the formation and periodic reversal in direction of Earth's magnetic field

E. core, rotating independently of and more quickly than Earth's outer layers, is responsible for advancing studies of the flow of heat from the inner through the outer planet and of how Earth's magnetic field forms and the periodic reversal of its direction

4. The application of a new method for analysing the chemistry of tooth enamel allows scientists to examine molars of pre-human ancestors and determining that their diets were more varied than had been supposed.

A. The application of a new method for analysing the chemistry of tooth enamel allows scientists to examine molars of pre-human ancestors and determining

B. Through the application of a new method for analysing the chemistry of tooth enamel, the molars of pre-human ancestors were examined by scientists who determined

C. When they applied a new method for analysing the chemistry of tooth enamel, scientists examined molars of pre-human ancestors, determining

D. Applying a new method for analysing the chemistry of tooth enamel, the molars of pre-human ancestors have been examined by scientists, who determined

E. Applying a new method for analysing the chemistry of tooth enamel, scientists have examined molars of pre-human ancestors and determined

5. The bones of Majungatholus atopus, a meat-eating dinosaur that is a distant relative of Tyrannosaurus rex and closely resembles South American predatory dinosaurs, have been discovered in Madagascar.

A. The bones of Majungatholus atopus, a meat-eating dinosaur that is a distant relative of Tyrannosaurus rex and closely resembles South American predatory dinosaurs, have been discovered in Madagascar.

B. The bones of a meat-eating dinosaur, Majungatholus atopus, a distant relative of Tyrannosaurus rex and with a close resemblance to South American predatory dinosaurs, has been discovered in Madagascar.

C. In Madagascar, the bones of a meat-eating dinosaur, Majungatholus atopus, distantly related to Tyrannosaurus rex and closely resembled South American predatory dinosaurs, have been discovered.

D. A distant relative of Tyrannosaurus rex, bearing a close resemblance to South American predatory dinosaurs is Majungatholus atopus, a meat-eating dinosaur, the bones of which have been discovered in Madagascar.

E. A distant relative of Tyrannosaurus rex and closely resembling South American predatory dinosaurs, the bones of a meat-eating dinosaur, Majungatholus atopus, have been discovered in Madagascar.

6. The proliferation of so-called cybersquatters, people who register the Internet domain names of high-profile companies in hopes of reselling the rights to those names for a profit, led to passing the Anti-Cybersquatting Consumer Protection Act in 1999, allowing companies to seek up to \$100000 in damages against those who register domain names with the sole intent of selling them later.

A. passing the Anti-Cybersquatting Consumer Protection Act in 1999, allowing companies to seek up to \$100000 in damages against those who register domain names with the sole intent of selling them later.

B. the passage of the Anti-Cybersquatting Consumer Protection Act in 1999, which allows companies to seek up to \$100000 in damages against those who register domain names with the sole intent that they will sell.

C. the passage in 1999 of the Anti-Cybersquatting Consumer Protection Act, which allows companies to seek up to \$100000 in damages against those who register domain names with the sole intent of selling.

D. the Anti-Cybersquatting Consumer Protection Act, which was passed in 1999, and it allows companies to seek up to \$100000 in damages against those who register domain names with the sole intent to sell.

E. the Anti-Cybersquatting Consumer Protection Act, passed in 1999, and it allows companies to seek up to \$100000 in damages against those who register domain names with the sole intent of selling

7. Five hundred million different species of living creatures have appeared on Earth, nearly 99 percent of them vanishing.

- A. Five hundred million different species of living creatures have appeared on Earth, nearly 99 percent of them vanishing.
- B. Nearly 99 percent of five hundred million different species of living creatures that appeared on Earth have vanished.
- C. Vanished are nearly 99 percent of the five hundred million different species of living creatures that appeared on Earth.
- D. Of five hundred million different species of living creatures that have appeared on Earth, nearly 99 percent of them have vanished.
- E. Of the five hundred million different species of living creatures that have appeared on Earth, nearly 99 percent have vanished.

8. Yellow jackets number among the 900 or so species of the world's social wasps, wasps living in a highly cooperative and organized society where they consist almost entirely of females—the queen and her sterile female workers.

- A. wasps living in a highly cooperative and organized society where they consist almost entirely of
- B. wasps that live in a highly cooperative and organized society consisting almost entirely of
- C. which means they live in a highly cooperative and organized society, almost all
- D. which means that their society is highly cooperative, organized, and it is almost entirely
- E. living in a society that is highly cooperative, organized, and it consists of almost all

9. The results of two recent unrelated studies support the idea that dolphins may share certain cognitive abilities with humans and great apes; the studies indicate dolphins as capable of recognizing themselves in mirrors—an ability that is often considered a sign of self-awareness—and to grasp spontaneously the mood or intention of humans.

- A. dolphins as capable of recognizing themselves in mirrors—an ability that is often considered a sign of self-awareness—and to grasp spontaneously
- B. dolphins' ability to recognize themselves in mirrors—an ability that is often considered as a sign of self-awareness—and of spontaneously grasping
- C. dolphins to be capable of recognizing themselves in mirrors—an ability that is often considered a sign of self-awareness—and to grasp spontaneously
- D. that dolphins have the ability of recognizing themselves in mirrors—an ability that is often considered as a sign of self-awareness—and spontaneously grasping
- E. that dolphins are capable of recognizing themselves in mirrors—an ability that is often considered a sign of self-awareness—and of spontaneously grasping

10. By recording the noise of crinkled wrappers as they were slowly stretched out in an otherwise silent chamber, and then digitizing and analyzing the sound emissions on computers, a team of scientists found the noise not continuous but consisted of individual bursts or pops just thousandths of a second long.

- A. digitizing and analyzing the sound emissions on computers, a team of scientists found the noise not
- B. digitizing and analyzing the sound emissions on computers, a team of scientists found that the noise was not
- C. digitizing and analyzing the sound emissions on computers, a team of scientists found the noise not to be
- D. the sound emissions were digitized and analyzed on computers, a team of scientists found that the noise was not
- E. the sound emissions were digitized and analyzed on computers, a team of scientists found the noise not to be

11. Because of wireless service costs plummeting in the last year, and as mobile phones are increasingly common, many people now using their mobile phones to make calls across a wide region at night and on weekends, when numerous wireless companies provide unlimited airtime for a relatively small monthly fee.

- A. Because of wireless service costs plummeting in the last year, and as mobile phones are increasingly common, many people
- B. As the cost of wireless service plummeted in the last year and as mobile phones became increasingly common, many people
- C. In the last year, with the cost of wireless service plummeting, and mobile phones have become increasingly common, there are many people
- D. With the cost of wireless service plummeting in the last year and mobile phones becoming increasingly common, many people are
- E. While the cost of wireless service has plummeted in the last year and mobile phones are increasingly common, many people are

12. Sound can travel through water for enormous distances, prevented from dissipating its acoustic energy as a result of boundaries in the ocean created by water layers of different temperatures and densities.

- A. prevented from dissipating its acoustic energy as a result of
- B. prevented from having its acoustic energy dissipated by
- C. its acoustic energy prevented from dissipating by
- D. its acoustic energy prevented from being dissipated as a result of
- E. preventing its acoustic energy from dissipating by

13. A New York City ordinance of 1897 regulated the use of bicycles, mandated a maximum speed of eight miles an hour, required of cyclists to keep feet on pedals and hands on handlebars at all times, and it granted pedestrians right-of-way.

A. regulated the use of bicycles, mandated a maximum speed of eight miles an hour, required of cyclists to keep feet on pedals and hands on handlebars at all times, and it granted

B. regulated the use of bicycles, mandated a maximum speed of eight miles an hour, required cyclists to keep feet on pedals and hands on handlebars at all times, granting

C. regulating the use of bicycles mandated a maximum speed of eight miles an hour, required cyclists that they keep feet on pedals and hands on handlebars at all times, and it granted

D. regulating the use of bicycles, mandating a maximum speed of eight miles an hour, requiring of cyclists that they keep feet on pedals and hands on handlebars at all times, and granted

E. regulating the use of bicycles mandated a maximum speed of eight miles an hour, required cyclists to keep feet on pedals and hands on handlebars at all times, and granted

14. Scholars who once thought Native American literatures were solely oral narratives recorded by missionaries or anthropologists now understand this body of work to consist of both oral literatures and the written works of Native American authors, who have been publishing since 1772.

- A. Scholars who once thought Native American literatures were solely oral narratives
- B. Scholars thinking of Native American literatures once solely as oral narratives, and
- C. Scholars who once had thought of Native American literatures solely as oral narratives and
- D. Native American literatures, which some scholars once thought were solely oral narratives
- E. Native American literatures, which some scholars once, thinking they were solely oral Narratives

15. Books in European libraries last longer than books in libraries in the United States because, although the climate in Europe is fairly humid, libraries there are not subjected to the extremes of temperature and humidity that damage collections in the United States.

- A. because, although the climate in Europe is fairly humid, libraries there are not subjected to the extremes of temperature and humidity that
- B. because, although the climate in Europe is fairly humid, libraries there are not subject of the extremes of temperature and humidity as those that
- C. because, although the climate in Europe is fairly humid, libraries there are not subjected to the extremities of temperature and humidity as
- D. because the climate in Europe is fairly humid, but still libraries there are not subject of the extremes of temperature and humidity as
- E. because the climate in Europe is fairly humid, but libraries there are not subjected to the extremities of temperature and humidity such as those that

16. Unlike the body's inflammatory response to cuts and sprains, with widespread swelling and stiffness immobilizing the injured area until it heals, the body's response to sunburn is more localized and resulting in a distinct line dividing affected and unaffected areas of the skin.

- A. with widespread swelling and stiffness immobilizing the injured area until it heals, the body's response to sunburn is more localized and resulting
- B. where the injured area is immobilized with widespread swelling and stiffness until it has healed, sunburn generates a more localized response in the body, which results instead
- C. with the injured area immobilized by means of widespread swelling and stiffness until healing, sunburn generates a more localized response in the body, one resulting
- D. in which widespread swelling and stiffness immobilize the injured area until it has healed, the body's more localized response to sunburn results
- E. in which widespread swelling and stiffness immobilize the injured area until healing, instead, the body's more localized response to sunburn results

17. The Kwakiutl recognized one social unit larger than the tribe—the confederacy, which was a cluster of loosely knit, informally related neighboring tribes who interacted with themselves more often than between other tribes.

- A. tribes who interacted with themselves more often than between
- B. tribes who interacted among each other more often than among
- C. tribes who interacted with one another more often than with
- D. tribes, interacting among each other more often than between
- E. tribes, interacting among one another more often than with

18. The fact of some fraternal twins resembling each other greatly and others looking quite dissimilar highlights an interesting and often overlooked feature of fraternal-twin pairs, namely they vary considerably on a spectrum of genetic relatedness.

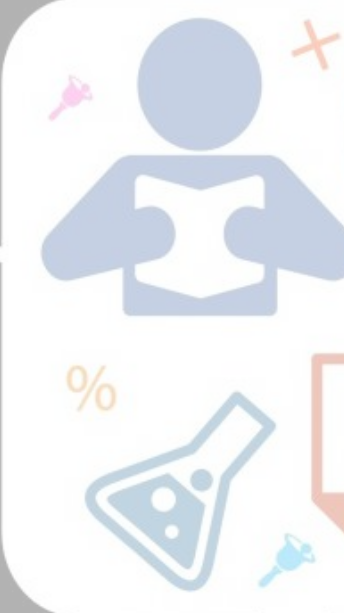
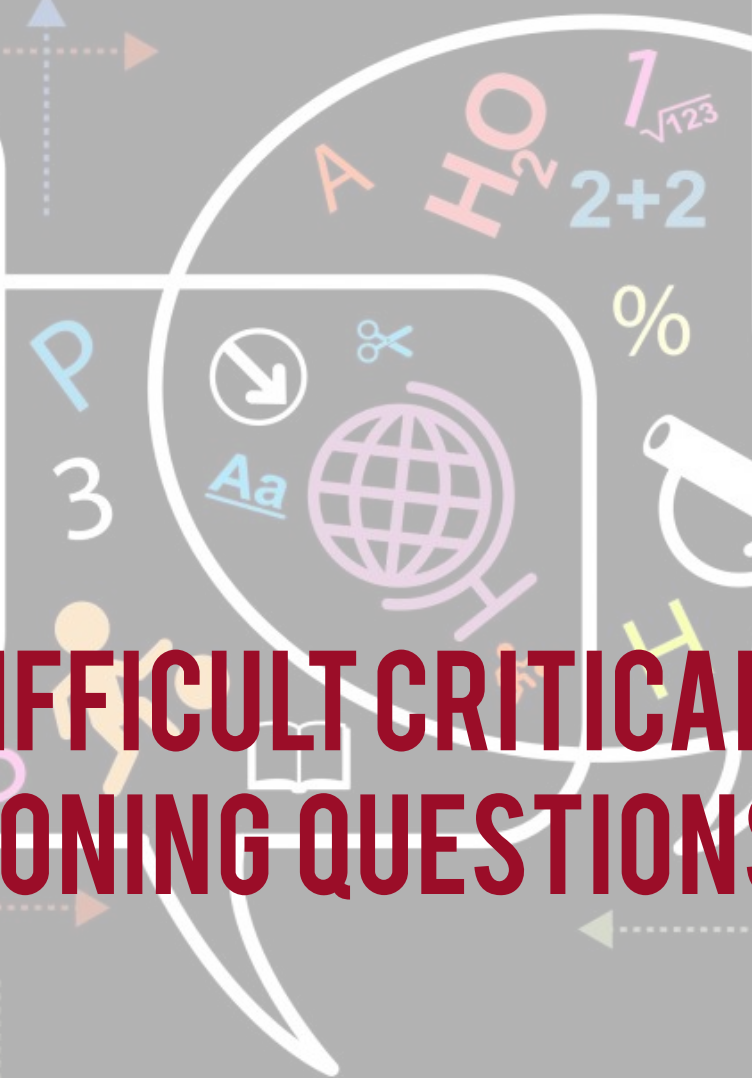
- A. The fact of some fraternal twins resembling each other greatly and others looking quite dissimilar highlights an interesting and often overlooked feature of fraternal-twin pairs, namely they vary considerably
- B. That some fraternal twins resemble each other greatly while others look quite dissimilar highlights an interesting and often overlooked feature of fraternal-twin pairs, namely that they vary considerably
- C. With some fraternal twins resembling each other greatly and others looking quite dissimilar, it highlights an interesting and often overlooked feature of fraternal-twin pairs, namely considerable variation
- D. With some fraternal twins resembling each other greatly and others looking quite dissimilar, it is a fact that highlights an interesting and often overlooked feature of fraternal-twin pairs, namely a considerable variation
- E. Because some fraternal twins resemble each other greatly and others look quite dissimilar, this fact highlights an interesting and often overlooked feature of fraternal-twin pairs, namely they vary considerably

19. There are no legal limits, as there are for cod and haddock, on the size of monkfish that can be caught, a circumstance that contributes to their depletion through overfishing.

- A. There are no legal limits, as there are for cod and haddock, on the size of monkfish that can be caught, a circumstance that contributes to their depletion through overfishing.
- B. There are no legal limits on the size of monkfish that can be caught, unlike cod or haddock, a circumstance that contributes to depleting them because they are being overfished.
- C. There are legal limits on the size of cod and haddock that can be caught, but not for monkfish, which contributes to its depletion through overfishing.
- D. Unlike cod and haddock, there are no legal size limits on catching monkfish, which contributes to its depletion by being overfished.
- E. Unlike catching cod and haddock, there are no legal size limits on catching monkfish, contributing to their depletion because they are overfished.

20. According to a survey of graduating medical students conducted by the Association of American Medical Colleges, minority graduates are nearly four times more likely than are other graduates in planning to practice in socioeconomically deprived areas.

- A. minority graduates are nearly four times more likely than are other graduates in planning to practice
- B. minority graduates are nearly four times more likely than other graduates who plan on practicing
- C. minority graduates are nearly four times as likely as other graduates to plan on practicing
- D. it is nearly four times more likely that minority graduates rather than other graduates will plan to practice
- E. it is nearly four times as likely for minority graduates than other graduates to plan to practice



20 DIFFICULT CRITICAL REASONING QUESTIONS

1. Twenty years ago, Balzania put in place regulations requiring operators of surface mines to pay for the reclamation of mined-out land. Since then, reclamation technology has not improved. Yet, the average reclamation cost for a surface coal mine being reclaimed today is only four dollars per ton of coal that the mine produced, less than half of what it cost to reclaim surface mines in the years immediately after the regulations took effect.

Which of the following, if true, most helps to account for the drop in reclamation costs described?

- A. Even after Balzania began requiring surface mine operators to pay reclamation costs, coal mines in Balzania continued to be less expensive to operate than coal mines in almost any other country.
- B. In the twenty years since the regulations took effect, the use of coal as a fuel has declined from the level it was at in the previous twenty years.
- C. Mine operators have generally ceased surface mining in the mountainous areas of Balzania because reclamation costs per ton of coal produced are particularly high for mines in such areas.
- D. Even after Balzania began requiring surface mine operators to pay reclamation costs, surface mines continued to produce coal at a lower total cost than underground mines.
- E. As compared to twenty years ago, a greater percentage of the coal mined in Balzania today comes from surface mines.

2. With a record number of new companies starting up in Derderia and with previously established companies adding many jobs, a record number of new jobs were created last year in the Derderian economy. This year, previously established companies will not be adding as many new jobs overall as such companies added last year. Therefore, unless a record number of companies start up this year, Derderia will not break its record for new jobs created.

Which of the following is an assumption on which the argument relies?

- A. Each year, new companies starting up create more new jobs overall than do previously established companies.
- B. Companies established last year will not add a greater number of jobs overall this year than they did last year.
- C. This year, the new companies starting up will not provide substantially more jobs per company than did new companies last year.
- D. This year, the overall number of jobs created by previously established companies will be less than the overall number of jobs lost at those companies.
- E. The number of jobs created in the Derderian economy last year was substantially larger than the number of jobs lost last year.

3. A diet high in saturated fats increases a person's risk of developing heart disease. Regular consumption of red wine reduces that risk. Per-capita consumption of saturated fats is currently about the same in France as in the United States, but there is less heart disease there than in the United States because consumption of red wine is higher in France. The difference in regular red-wine consumption has been narrowing, but no similar convergence in heart-disease rates has occurred.

Which of the following, if true, most helps to account for the lack of convergence noted above?

- A. Consumption of saturated fats is related more strongly to the growth of fatty deposits on artery walls, which reduce blood flow to the heart, than it is to heart disease directly.
- B. Over the past 30 years, per-capita consumption of saturated fats has remained essentially unchanged in the United States but has increased somewhat in France.
- C. Reports of the health benefits of red wine have led many people in the United States to drink red wine regularly.
- D. Cigarette smoking, which can also contribute to heart disease, is only slightly more common in France than in the United States.
- E. Regular consumption of red wine is declining dramatically among young adults in France, and heart disease typically does not manifest itself until middle age.

4. Although exposure to asbestos is the primary cause for mesothelioma, a slow-developing cancer, researchers believe that infection by the SV40 virus is a contributing case, since in the US 60 percent of tissue samples from mesotheliomas, but none from healthy tissue, contain SV40. SV40 is a monkey virus; however, in 1960 some polio vaccine was contaminated with the virus. Researchers hypothesize that this vaccine was the source of the virus found in mesotheliomas decades later.

Which of the following, if true, most strongly supports the researchers' hypothesis?

- A. SV40 is widely used as a research tool in cancer laboratories.
- B. Changes in the technique of manufacturing the vaccine now prevent contamination with SV40.
- C. Recently discovered samples of the vaccine dating from 1960 still show traces of the virus.
- D. In a small percentage of cases of mesothelioma, there is no history of exposure to asbestos.
- E. In Finland, where the polio vaccine was never contaminated, samples from mesotheliomas do not contain SV40.

5. In general, jobs are harder to get in times of economic recession because many businesses cut back operations. However, any future recessions in Vargonia will probably not reduce the availability of teaching jobs at government-funded schools. This is because Vargonia has just introduced a legal requirement that education in government-funded schools be available, free of charge, to all Vargonian children regardless of the state of the economy, and that current student-teacher ratios not be exceeded.

Which of the following, if true, most strengthens the argument?

- A. The current student-teacher ratio at Vargonia's government-funded schools is higher than it was during the most recent period of economic recession.
- B. During recent periods when the Vargonian economy has been strong, almost 25 percent of Vargonian children have attended privately funded schools, many of which charge substantial fees.
- C. Nearly 20 percent more teachers are currently employed in Vargonia's government-funded schools than had been employed in those schools in the period before the last economic recession.
- D. Teachers in Vargonia's government-funded schools are well paid relative to teachers in most privately funded schools in Vargonia, many of which rely heavily on part-time teachers.
- E. During the last economic recession in Vargonia, the government permanently closed a number of the schools that it had funded.

6. Outbreaks of Rift Valley fever occur irregularly in East Africa, several years apart. When outbreaks do occur, they kill thousands of cattle. A livestock vaccine against the disease exists but is rarely used. It is too expensive for farmers to use routinely, and since it is not effective until a month after vaccination, administering it after an outbreak begins helps very little. Nevertheless, experts predict that use of the vaccine will increase significantly within the next few years.

Which of the following, if true, provides the strongest justification for the experts' prediction?

- A. Rift Valley fever is spread by mosquitoes, but each outbreak is so widespread that it is impractical to control it by using insecticides.
- B. When an outbreak of Rift Valley fever occurs, unaffected countries often refuse to import livestock from the countries affected by the outbreak.
- C. It would take less than a month for producers of the vaccine to adjust their production operations to cope with a large increase in demand.
- D. Many cattle farmers in East Africa are nomadic or live in remote villages, and such farmers, who have little access to modern veterinary medicine, are particularly hard hit by outbreaks of Rift Valley fever.
- E. Recently published research has shown that certain identifiable climatic conditions are almost invariably followed, within two to five months, by an outbreak of Rift Valley fever.

7. The traditional treatment of strep infections has been a seven-day course of antibiotics, either penicillin or erythromycin. However, since many patients stop taking those drugs within three days, reinfection is common in cases where those drugs are prescribed. A new antibiotic requires only a three-day course of treatment. Therefore, reinfection will probably be less common in cases where the new antibiotic is prescribed than in cases where either penicillin or erythromycin is prescribed.

Which of the following, if true, most strengthens the argument?

- A. Some of the people who are allergic to penicillin are likely to be allergic to the new antibiotic.
- B. A course of treatment with the new antibiotic costs about the same as a course of treatment with either penicillin or erythromycin.
- C. The new antibiotic has been shown to be effective in eradicating bacterial infections other than strep.
- D. Some physicians have already begun to prescribe the new antibiotic instead of penicillin or erythromycin for the treatment of some strep infections.
- E. Regardless of whether they take a traditional antibiotic or the new one, most patients feel fully recovered after taking the drug for three days.

8. Driving the steep road to the mountain-top Inca ruins of Machu Picchu is potentially dangerous and hiking there is difficult. Now the Peruvian government is installing a cable car that will make access much easier, and hence result in a large increase in tourism. However, since the presence of large numbers of tourists tends to accelerate the deterioration of a site, installation of the cable car is certain to result in harm to the ruins.

Which of the following, if true, most seriously calls into question the argument?

- A. The daily number of tourists that are expected to take the cable car to Machu Picchu is smaller than the original resident population of Incas.
- B. The construction of the cable car terminal at Machu Picchu will require the use of potentially damaging heavy machinery at the site.
- C. Machu Picchu is already one of the most popular tourist sites in Peru.
- D. Natural weathering will continue to be a more significant cause of the deterioration of Machu Picchu than tourist traffic.
- E. The cable car will replace the tour buses whose large wheels and corrosive exhaust at present do significant damage to the site.

9. **Delta Products Inc. has recently switched at least partly from older technologies using fossil fuels to new technologies powered by electricity.** The question has been raised whether it can be concluded that for a given level of output Delta's operation now causes less fossil fuel to be consumed than it did formerly. The answer, clearly, is yes, since **the amount of fossil fuel used to generate the electricity needed to power the new technologies is less than the amount needed to power the older technologies, provided level of output is held constant.**

In the argument given, the two boldfaced portions play which of the following roles?

- A. The first identifies the content of the conclusion of the argument; the second provides support for that conclusion.
- B. The first provides support for the conclusion of the argument; the second identifies the content of that conclusion.
- C. The first states the conclusion of the argument; the second calls that conclusion into question.
- D. The first provides support for the conclusion of the argument; the second calls that conclusion into question.
- E. Each provides support for the conclusion of the argument.

10. Lyme disease is caused by a bacterium transmitted to humans by deer ticks. Generally, deer ticks pick up the bacterium while in the larval stage by feeding on infected white-footed mice. However, certain other species on which the larvae feed do not harbour the bacterium. If the population of these species increased, more of the larvae would be feeding on uninfected hosts, so the number of ticks acquiring the bacterium would likely decline.

Which of the following would it be most important to ascertain in evaluating the argument?

- A. Whether populations of the other species on which deer tick larvae feed are found only in the areas also inhabited by white-footed mice.
- B. Whether the size of the deer tick population is currently limited by the availability of animals for the tick's larval stage to feed on.
- C. Whether the infected deer tick population could be controlled by increasing the number of animals that prey on white-footed mice.
- D. Whether deer ticks that were not infected as larvae can become infected as adults by feeding on deer on which infected deer ticks have fed.
- E. Whether the other species on which deer tick larvae feed harbour any other bacteria that ticks transmit to humans.

11. Plant scientists have been able to genetically engineer vegetable seeds to produce crops that are highly resistant to insect damage. Although these seeds currently cost more than conventional seeds, their cost is likely to decline. Moreover, farmers planting them can use far less pesticide and most consumers prefer vegetables grown with less pesticide, therefore, for crops for which these seeds can be developed, their use is likely to become the norm.

Which of the following would be most useful to know in evaluating the argument above?

- A. Whether plant scientists have developed insect-resistant seeds for every crop that is currently grown commercially.
- B. Whether farmers typically use agricultural pesticides in larger amounts than is necessary to prevent crop damage.
- C. Whether plants grown from the new genetically engineered seeds can be kept completely free of insect damage.
- D. Whether seeds genetically engineered to produce insect-resistant crops generate significantly lower per acre crop yields than do currently used seeds.
- E. Whether most varieties of crops currently grown commercially have greater natural resistance to insect damage than did similar varieties in the past.

12. Parland's alligator population has been declining in recent years, primarily because of hunting. Alligators prey heavily on a species of freshwater fish that is highly valued as food by Parlanders, who had hoped that the decline in the alligator population would lead to an increase in the numbers of these fish available for human consumption. Yet the population of this fish species has also declined, even though the annual number caught for human consumption has not increased.

Which of the following, if true, most helps to explain the decline in the population of the fish species?

A. The decline in the alligator population has meant that fishers can work in some parts of lakes and rivers that were formerly too dangerous.

B. Over the last few years, Parland's commercial fishing enterprises have increased the number of fishing boats they use.

C. Many Parlanders who hunt alligators do so because of the high market price of alligator skins, not because of the threat alligators pose to the fish population.

D. During Parland's dry season, holes dug by alligators remain filled with water long enough to provide a safe place for the eggs of this fish species to hatch.

E. In several neighbouring countries through which Parland's rivers also flow, alligators are at risk of extinction as a result of extensive hunting.

13. In a certain wildlife park, park rangers are able to track the movements of many rhinoceroses because those animals wear radio collars. When, as often happens, a collar slips off, it is put back on. Putting a collar on a rhinoceros involves immobilizing the animal by shooting it with a tranquilizer dart. Female rhinoceroses that have been frequently recollared have significantly lower fertility rates than uncollared females. Probably, therefore, some substance in the tranquilizer inhibits fertility.

In evaluating the argument, it would be most useful to determine which of the following?

- A. Whether there are more collared female rhinoceroses than uncollared female rhinoceroses in the park.
- B. How the tranquilizer that is used for immobilizing rhinoceroses differs, if at all, from tranquilizers used in working with other large mammals.
- C. How often park rangers need to use tranquilizer darts to immobilize rhinoceroses for reasons other than attaching radio collars.
- D. Whether male rhinoceroses in the wildlife park lose their collars any more often than the park's female rhinoceroses do.
- E. Whether radio collars are the only practical means that park rangers have for tracking the movements of rhinoceroses in the park.

14. Industrialists from the country Distopia were accused of promoting the Distopian intervention in the Arcadian civil war merely to ensure that the industrialists' facilities in Arcadia made substantial profits during the war. Yet this cannot be the motive since, as the Distopians foresaw, Distopia's federal expenses for the intervention were eight billion dollars, whereas, during the war, profits from the Distopian industrialists' facilities in Arcadia totalled only four billion dollars.

Which of the following, if true, exposes a serious flaw in the argument made in the second sentence above?

- A. During the Arcadian war, many Distopian industrialists with facilities located in Arcadia experienced a significant rise in productivity in their facilities located in Distopia.
- B. The largest proportion of Distopia's federal expenses is borne by those who receive no significant industrial profits.
- C. Most Distopian industrialists' facilities located in Arcadia are expected to maintain the level of profits they achieved during the war.
- D. Distopian industrialists' facilities in Arcadia made substantial profits before the events that triggered the civil war.
- E. Many Distopians expressed concern over the suffering that Arcadians underwent during the civil war.

15. Archaeologists in Michigan have excavated a Native American camp near Dumaw Creek. Radiocarbon dating of animal bones found at the site indicates that the camp dates from some time between 1605 and 1755. However, the camp probably dates to no later than 1630, since no European trade goods were found at the site, and European traders were active in the region from the 1620's onward.

Which of the following, if true, most strengthens the argument?

- A. Due to trade among Native Americans, some European trade goods would have reached the area before the European traders themselves did.
- B. At all camps in the region that have been reliably dated to the late 1620's, remains of European trade goods have been found.
- C. The first European trade goods to reach the area would have been considered especially valuable and preserved as much as possible from loss or destruction.
- D. The first European traders in the area followed soon after the first European explorers.
- E. The site is that of a temporary camp that would have been used seasonally for a few years and then abandoned.

16. For years the beautiful Renaissance buildings in Palitito have been damaged by exhaust from the many tour buses that come to the city. There has been little parking space, so most buses have idled at the curb during each stop on their tour, and idling produces as much exhaust as driving. The city has now provided parking that accommodates a third of the tour buses, so damage to Palitito's buildings from the buses' exhaust will diminish significantly.

Which of the following, if true, most strongly supports the argument?

- A. The exhaust from Palitito's few automobiles is not a significant threat to Palitito's buildings.
- B. Palitito's Renaissance buildings are not threatened by pollution other than engine exhaust.
- C. Tour buses typically spend less than one-quarter of the time they are in Palitito transporting passengers from one site to another.
- D. More tourists come to Palitito by tour bus than by any other single means of transportation.
- E. Some of the tour buses that are unable to find parking drive around Palitito while their passengers are visiting a site.

17. Hunter: Hunters alone are blamed for the decline in Green-rock National Forest's deer population over the past ten years. **Yet clearly, black bears have also played an important role in this decline.** In the past ten years, the forest's protected black bear population has risen sharply, and examination of black bears found dead in the forest during the deer hunting season showed that a number of them had recently fed on deer.

In the hunter's argument, the boldface portion plays which of the following roles?

- A. It is the main conclusion of the argument.
- B. It is an objection that has been raised against the main conclusion of the argument.
- C. It is a judgment that the argument opposes.
- D. It is a finding that the argument seeks to explain.
- E. It provides evidence in support of the main conclusion of the argument.

18. Most of the world's supply of uranium currently comes from the mines. It is possible to extract uranium from seawater, but the cost of doing so is greater than the price that Uranium fetches on the world market. Therefore, until the cost of extracting uranium from seawater can somehow be reduced, this method of obtaining uranium is unlikely to be commercially viable.

Which of the following would it be most useful to determine in evaluating the argument?

- A. Whether the uranium in deposits on land is rapidly being depleted
- B. Whether most uranium is used near where it is mined
- C. Whether there are any technological advances that show promise of reducing the costs of extracting uranium from seawater
- D. Whether the total amount of Uranium in seawater is significantly greater than the total amount of uranium on land
- E. Whether uranium can be extracted from freshwater at a cost similar to the cost of extracting it from seawater.

19. Parasitic wasps lay their eggs directly into the eggs of various host insects in exactly the right numbers for any suitable size of host egg. If they laid too many eggs in a host egg, the developing wasp larvae would compete with each other to the death for nutrients and space. If too few eggs were laid, portions of the host egg would decay, killing the wasp larvae.

Which of the following conclusions can properly be drawn from the information above?

- A. The size of the smallest host egg that a wasp could theoretically parasitize can be determined from the wasp's egg-laying behaviour.
- B. Host insects lack any effective defences against the form of predation practiced by parasitic wasps.
- C. Parasitic wasps learn from experience how many eggs to lay into the eggs of different host species.
- D. Failure to lay enough eggs would lead to the death of the developing wasp larvae more quickly than would laying too many eggs.
- E. Parasitic wasps use visual clues to calculate the size of a host egg.

20. Some airlines allegedly reduce fares on certain routes to a level at which they lose money, in order to drive competitors off those routes. However, this method of eliminating competition cannot be profitable in the long run. Once an airline successfully implements this method, any attempt to recoup the earlier losses by charging high fares on that route for an extended period would only provide competitors with a better opportunity to undercut the airline's fares.

Which of the following, if true, most seriously weakens the argument?

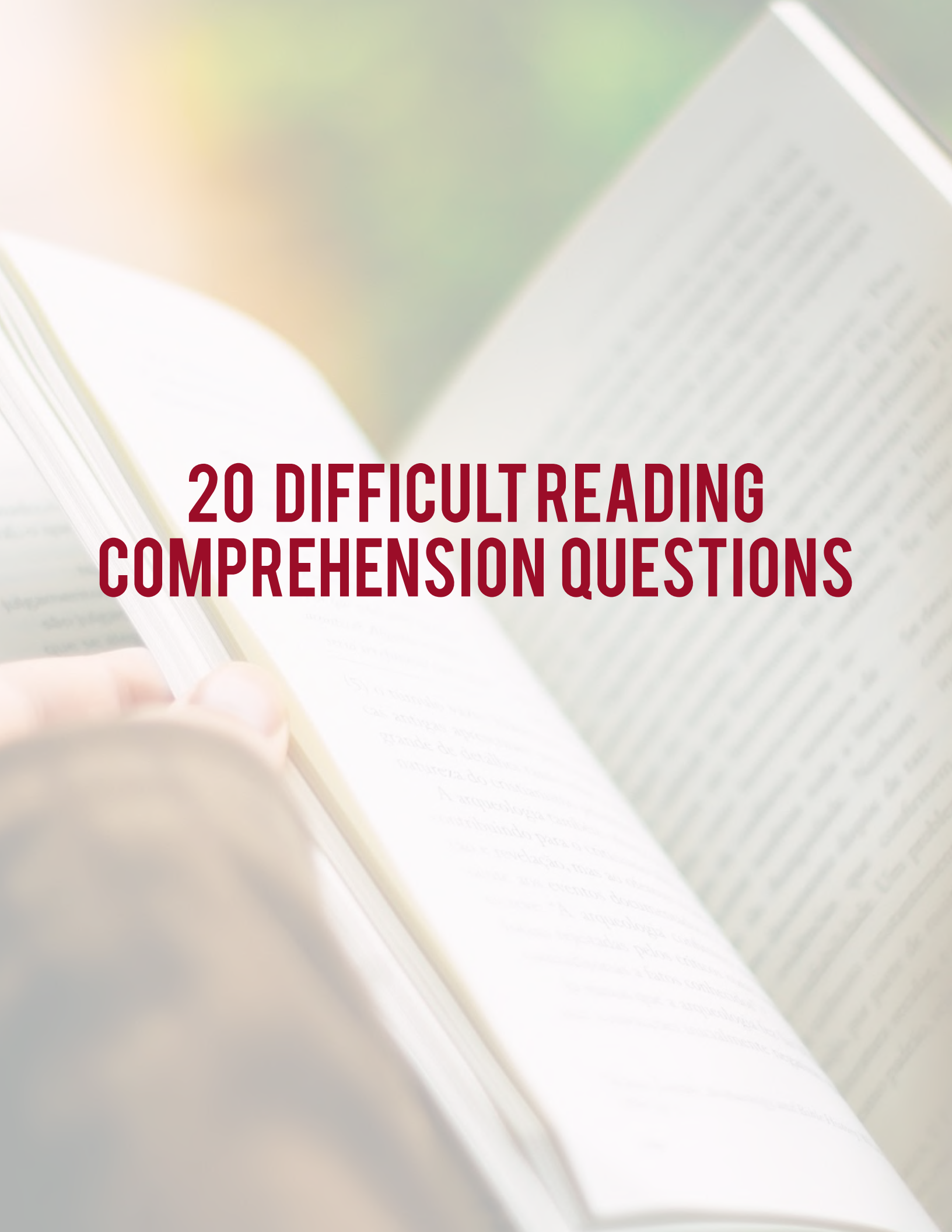
A. In some countries it is not illegal for a company to drive away competitors by selling a product below cost.

B. Airline executives generally believe that a company that once underpriced its fares to drive away competitors is very likely to do so again if new competitors emerge.

C. As part of promotions designed to attract new customers, airlines sometimes reduce their ticket prices to below an economically sustainable level.

D. On deciding to stop serving particular routes, most airlines shift resources to other routes rather than reduce the size of their operations.

E. When airlines dramatically reduce their fares on a particular route, the total number of air passengers on that route increases greatly.

A hand is holding an open book, with the left page visible and the right page partially obscured. The background is a soft, out-of-focus gradient of green and yellow. Overlaid on the center of the image is the text "20 DIFFICULT READING COMPREHENSION QUESTIONS" in a bold, dark red font.

20 DIFFICULT READING COMPREHENSION QUESTIONS

(5) o texto apresenta uma grande variedade de detalhes e a natureza do conteúdo.

A arqueologia também contribuiu para a compreensão da civilização, mas as evidências são escassas. A arqueologia também contribuiu para a compreensão da civilização, mas as evidências são escassas.

A arqueologia também contribuiu para a compreensão da civilização, mas as evidências são escassas. A arqueologia também contribuiu para a compreensão da civilização, mas as evidências são escassas.

A arqueologia também contribuiu para a compreensão da civilização, mas as evidências são escassas. A arqueologia também contribuiu para a compreensão da civilização, mas as evidências são escassas.

Passage 1:

Conventional wisdom has it that large deficits in the United States budget cause interest rates to rise. Two main arguments are given for this claim. According to the first, as the deficit increases, the government will borrow more to make up for the ensuing shortage of funds. Consequently, it is argued, if both the total supply of credit (money available for borrowing) and the amount of credit sought by nongovernment borrowers remain relatively stable, as is often supposed, then the price of credit (the interest rate) will increase. That this is so is suggested by the basic economic principle that if supplies of a commodity (here, credit) remain fixed and demand for that commodity increases, its price will also increase. The second argument supposes that the government will tend to finance its deficits by increasing the money supply with insufficient regard for whether there is enough room for economic growth to enable such an increase to occur without causing inflation. It is then argued that financiers will expect the deficit to cause inflation and will raise interest rates, anticipating that because of inflation the money they lend will be worth less when paid back.

Unfortunately for the first argument, it is unreasonable to assume that nongovernment borrowing and the supply of credit will remain relatively stable. Nongovernment borrowing sometimes decreases. When it does, increased government borrowing will not necessarily push up the total demand for credit. Alternatively, when credit availability increases, for example through greater foreign lending to the United States, then interest rates need not rise, even if both private and government borrowing increase. The second argument is also problematic. Financing the deficit by increasing the money supply should cause inflation only when there is not enough room for economic growth. Currently, there is no reason to expect deficits to cause inflation. However, since many financiers believe that deficits ordinarily create inflation, then **admittedly** they will be inclined to raise interest rates to offset mistakenly anticipated inflation. This effect, however, is due to ignorance, not to the deficit itself, and could be lessened by educating financiers on this issue.

1. Which of the following best summarizes the central idea of the passage?

- A. A decrease in nongovernment borrowing or an increase in the availability of credit can eliminate or lessen the ill effects of increased borrowing by the government.
- B. Educating financiers about the true relationship between large federal deficits and high interest rates will make financiers less prone to raise interest rates in response to deficits.
- C. There is little support for the widely held belief that large federal deficits will create higher interest rates, as the main arguments given to defend this claim are flawed.
- D. When the government borrows money, demand for credit increases, typically creating higher interest rates unless special conditions such as decreased consumer spending arise.
- E. Given that most financiers believe in a cause-and-effect relationship between large deficits and high interest rates, it should be expected that financiers will raise interest rates.

2. It can be inferred from the passage that proponents of the second argument would most likely agree with which of the following statements?

- A. The United States government does not usually care whether or not inflation increases.
- B. People in the United States government generally know very little about economics.
- C. The United States government is sometimes careless in formulating its economic policies.
- D. The United States government sometimes relies too much on the easy availability of foreign credit.
- E. The United States government increases the money supply whenever there is enough room for growth to support the increase.

3. Which of the following claims concerning the United States government's financing of the deficit does the author make in discussing the second argument?

- A. The government will decrease the money supply in times when the government does not have a deficit to finance.
- B. The government finances its deficits by increasing the money supply whenever the economy is expanding.
- C. As long as the government finances the deficit by borrowing, nongovernment borrowers will pay higher interest rates.
- D. The only way for the government to finance its deficits is to increase the money supply without regard for whether such an increase would cause inflation.
- E. Inflation should be caused when the government finances the deficit by increasing the money supply only if there is not enough room for economic growth to support the increase.

4. The author uses the term "admittedly" (see highlighted text) in order to indicate that

- A. the second argument has some truth to it, though not for the reasons usually supposed.
- B. the author has not been successful in attempting to point out inadequacies in the two arguments.
- C. the thesis that large deficits directly cause interest rates to rise has strong support after all.
- D. financiers should admit that they were wrong in thinking that large deficits will cause higher inflation rates.
- E. financiers generally do not think that the author's criticisms of the second argument are worthy of consideration.

Passage 2:

Recent feminist scholarship concerning the United States in the 1920's challenges earlier interpretations that assessed the twenties in terms of the unkept "promises" of the women's suffrage movement. This new scholarship disputes the long-held view that because a women's voting bloc did not materialize after women gained the right to vote in 1920, suffrage failed to produce long-term political gains for women. These feminist scholars also challenge the old view that pronounced suffrage a failure for not delivering on the promise that the women's vote would bring about moral, corruption free governance. Asked whether women's suffrage was a failure, these scholars cite the words of turn-of-the- century social reformer Jane Addams, "Why don't you ask if suffrage in general is failing?"

In some ways, however, these scholars still present the 1920's as a period of decline. After suffrage, they argue, the feminist movement lost its cohesiveness, and gender consciousness waned. After the mid-1920's, few successes could be claimed by feminist reformers: little could be seen in the way of legislative victories. During this decade, however, there was intense activism aimed at achieving increased autonomy for women, broadening the spheres within which they lived their daily lives. Women's organizations worked to establish opportunities for women: they strove to secure for women the full entitlements of citizenship, including the right to hold office and the right to serve on juries.

5. The passage is primarily concerned with

- A. providing evidence indicating that feminist reformers of the 1920's failed to reach some of their goals.
- B. presenting scholarship that contrasts suffragist "promises" with the historical realities of the 1920's.
- C. discussing recent scholarship concerning the achievements of women's suffrage during the 1920's and presenting an alternative view of those achievements.
- D. outlining recent findings concerning events leading to suffrage for women in the 1920's and presenting a challenge to those findings.
- E. providing support for a traditional view of the success of feminist attempts to increase gender consciousness among women during the 1920's.

6. It can be inferred that the author of the passage disagrees with the “new scholarship” mentioned in the passage regarding the

- A. degree to which the “promises” of the suffrage movement remained unkept.
- B. degree to which suffrage for women improved the morality of governance.
- C. degree to which the 1920’s represented a period of decline for the feminist movement.
- D. degree of legislative success achieved by feminist reformers during the 1920’s.
- E. accuracy of the view that a women’s voting bloc did not materialize once suffrage was achieved.

7. The purpose of the second paragraph of the passage is to

- A. suggest a reason why suffragist “promises” were not kept.
- B. contrast suffragist “promises” with the reality of the 1920’s.
- C. deplore the lack of successful feminist reform in 1920’s.
- D. explain a view held by feminist scholars.
- E. answer the question asked by Jane Addams.

Passage 3:

In a 1984 book, Claire C. Robertson argued that, before colonialism, age was a more important indicator of status and authority than gender in Ghana and in Africa generally. British colonialism imposed European-style male-dominant notions upon more egalitarian local situations to the detriment of women generally, and gender became a defining characteristic that weakened women's power and authority.

[Line 18] Subsequent research in Kenya convinced Robertson that she had overgeneralized about Africa. Before colonialism, gender was more salient in central Kenya than **[Line 26]** it was in Ghana, although age was still crucial in determining authority. In contrast with Ghana, where women had traded for hundreds of years and achieved legal majority (not unrelated phenomena), the evidence regarding central Kenya indicated that women were legal minors and were sometimes treated as male property, as were European women at that time. Factors like strong patrilinearity and patrilocality, as well as women's inferior land rights and lesser involvement in trade, made women more dependent on men than was generally the case in Ghana. However, since age apparently remained the overriding principle of social organization in central Kenya, some senior women had much authority. Thus, Robertson revised her hypothesis somewhat, arguing that in determining authority in precolonial Africa age was a primary principle that superseded gender to varying degrees depending on the situation.

8. The primary purpose of the passage is to

- A. present evidence undermining a certain hypothesis.
- B. describe a particular position and its subsequent modification.
- C. discuss two contrasting viewpoints regarding a particular issue.
- D. describe how a social phenomenon varied by region.
- E. evaluate an assumption widely held by scholars.

9. The passage indicates that Robertson's research in Kenya caused her to change her mind regarding which of the following?

- A. Whether age was the prevailing principle of social organization in Kenya before colonialism.
- B. Whether gender was the primary determinant of social authority in Africa generally before colonialism.
- C. Whether it was only after colonialism that gender became a significant determinant of authority in Kenyan society.
- D. Whether age was a crucial factor determining authority in Africa after colonialism.
- E. Whether British colonialism imposed European-style male-dominant notions upon local situations in Ghana.

10. The passage suggests that after conducting the research mentioned in line 18, but not before, Robertson would have agreed with which of the following about women's status and authority in Ghana?

A. Greater land rights and greater involvement in trade made women in precolonial Ghana less dependent on men than were European women at that time.

B. Colonialism had a greater impact on the status and authority of Ghanaian women than on Kenyan women.

C. Colonialism had less of an impact on the status and authority of Ghanaian women than it had on the status and authority of other African women.

D. The relative independence of Ghanaian women prior to colonialism was unique in Africa.

E. Before colonialism, the status and authority of Ghanaian women was similar to that of Kenyan women.

11. The author of the passage mentions the status of age as a principle of social organization in precolonial central Kenya in lines 24-26 most likely in order to

A. indicate that women's dependence on men in precolonial Kenya was not absolute.

B. contrast the situation of senior women to that of less senior women in precolonial Kenyan society.

C. differentiate between the status and authority of precolonial Kenyan women and that of precolonial Ghanaian women.

D. explain why age superseded gender to a greater extent in precolonial Kenya than it did elsewhere in Africa.

E. identify a factor that led Robertson to revise her hypothesis about precolonial Africa.

Passage 4:

The professionalization of the study of history in the second half of the nineteenth century, including history's transformation from a literary genre to a scientific discipline, had important consequences not only for historians' perceptions of women but also for women as historians. The disappearance of women as objects of historical studies during this period has **elements of irony** to it. On the one hand, in writing about women, earlier historians had relied not on firsthand sources but rather on secondary sources; the shift to more rigorous research methods required that secondary sources be disregarded. On the other hand, the development of archival research and the critical editing of collections of documents began to reveal significant new historical evidence concerning women, yet this evidence was perceived as substantially irrelevant: historians saw political history as the general framework for historical writing. Because women were seen as belonging to the private rather than to the public sphere, the discovery of documents about them, or by them, did not, by itself, produce history acknowledging the contributions of women. In addition, genres such as biography and memoir, those forms of "particular history" that women had traditionally authored, fell into disrepute. The dividing line between "particular history" and general history was redefined in stronger terms, widening the gulf between amateur and professional practices of historical research.

12. The passage is primarily concerned with

- A. describing some effects of the professionalization of the study of history on the writing of women's history.
- B. explaining some reasons for the professionalization of the writing of history.
- C. discussing the kinds of historical writing traditionally practiced by women.
- D. contrasting the approach to the writing of history taken by women with the approach taken by men.
- E. criticizing certain changes that occurred in the writing of history during the second half of the nineteenth century.

13. Which of the following best describes one of the "elements of irony" referred to in the highlighted text?

A. Although the more scientific-minded historians of the second half of the nineteenth century considered women appropriate subjects for historical writing, earlier historians did not.

B. Although archival research uncovered documentary evidence of women's role in history, historians continued to rely on secondary sources for information about women.

C. Although historians were primarily concerned with writing about the public sphere, they generally relegated women to the private sphere.

D. The scientific approach to history revealed more information about women, but that information was ignored.

E. The professionalization of history, while marginalizing much of women's writing about history, enhanced the importance of women as historical subjects.

14. According to the passage, the development of archival research and the critical editing of collections of documents had which of the following effects?

- A. Historians increasingly acknowledged women's contributions to history.
- B. Historians began to debate whether secondary sources could provide reliable information.
- C. Historians began to apply less rigorous scientific research criteria to the study of women's history.
- D. More evidence concerning women became available to historical researchers.
- E. Women began to study history as professional historians.

Passage 5 :

Prior to 1965 geologists assumed that the two giant rock plates meeting at the San Andreas Fault generate heat through friction as they grind past each other, but in 1965 Henyey found that temperatures in drill holes near the fault were not as elevated as had been expected. Some geologists wondered whether the absence of friction-generated heat could be explained by the kinds of rock composing the fault. Geologists' pre-1965 assumptions concerning heat generated in the fault were based on calculations about common varieties of rocks, such as limestone and granite; but "weaker" materials, such as clays, had already been identified in samples retrieved from the fault zone. Under normal conditions, rocks composed of clay produce far less friction than do other rock types. In 1992 Byerlee tested whether these materials would produce friction 10 to 15 kilometres below the Earth's surface. Byerlee found that when clay samples were subjected to the thousands of atmospheres of pressure they would encounter deep inside the Earth, they produced as much friction as was produced by other rock types. The harder rocks push against each other, the hotter they become; in other words, pressure itself, not only the rocks' properties, affects frictional heating. Geologists therefore wondered whether the friction between the plates was being reduced by pockets of pressurized water within the fault that push the plates away from each other.

15. The passage suggests which of the following regarding Henyey's findings about temperature in the San Andreas Fault?

- A. Scientists have yet to formulate a definitive explanation for Henyey's findings.
- B. Recent research suggests that Henyey's explanation for the findings should be modified.
- C. Henyey's findings had to be recalculated in light of Byerlee's 1992 experiment.
- D. Henyey's findings provided support for an assumption long held by geologists.
- E. Scientists have been unable to duplicate Henyey's findings using more recent experimental methods.

16. The passage is primarily concerned with

- A. evaluating a method used to test a particular scientific hypothesis.
- B. discussing explanations for an unexpected scientific finding.
- C. examining the assumptions underlying a particular experiment.
- D. questioning the validity of a scientific finding.
- E. presenting evidence to support a recent scientific hypothesis.

17. The passage mostly agree that Heney's findings about temperature in the San Andreas Fault made the greatest contribution in that they

A. revealed an error in previous measurements of temperature in the San Andreas Fault zone.

B. indicated the types of clay present in the rocks that form the San Andreas Fault.

C. established the superiority of a particular technique for evaluating data concerning friction in the San Andreas Fault.

D. suggested that geologists had inaccurately assumed that giant rock plates that meet at the San Andreas Fault generate heat through friction.

E. confirmed geologists' assumptions about the amount of friction generated by common varieties of rocks, such as limestone and granite.

Passage 6 :

The human species came into being at the time of the greatest biological diversity in the history of the Earth. Today, as human populations expand and alter the natural environment, they are reducing biological diversity to its lowest level since the end of the Mesozoic era, 65 million years ago. The ultimate consequences of this biological collision are beyond calculation, but they are certain to be harmful. That, in essence, is the biodiversity crisis.

The history of global diversity can be summarized as follows: after the initial flowering of multicellular animals, there was a swift rise in the number of species in early Paleozoic times (between 600 and 430 million years ago), then plateau like stagnation for the remaining 200 million years of the Paleozoic era, and finally a slow but steady climb through the Mesozoic and Cenozoic eras to diversity's all-time high. This history suggests that biological diversity was hard won and a long time in coming. Furthermore, this pattern of increase was set back by five massive extinction episodes. The most recent of these, during the Cretaceous period, is by far the most famous, because it ended the age of the dinosaurs, conferred hegemony on the mammals, and ultimately made possible the ascendancy of the human species. But the Cretaceous crisis was minor compared with the Permian extinctions 240 million years ago, during which between 77 and 96 percent of marine animal species perished. It took 5 million years, well into Mesozoic times, for species diversity to begin a significant recovery.

Within the past 10,000 years biological diversity has entered a wholly new era. Human activity has had a devastating effect on species diversity, and the rate of human-induced extinctions is accelerating. Half of the bird species of Polynesia have been eliminated through hunting and the destruction of native forests. Hundreds of fish species endemic to Lake Victoria are now threatened with extinction following the careless introduction of one species of fish, the Nile perch. The list of such biogeographic disasters is extensive.

Because every species is unique and irreplaceable, the loss of biodiversity is the most profound process of environmental change. Its consequences are also the least predictable because the value of Earth's biota (the fauna and flora collectively) remains largely unstudied and unappreciated; unlike material and cultural wealth, which we understand because they are the substance of our everyday lives, biological wealth is usually taken for granted. This is a serious strategic error, one that will be increasingly regretted as time passes. The biota is not only part of a country's heritage, the product of millions of years of evolution centered on that place; it is also a potential source for immense untapped material wealth in the form of food, medicine, and other commercially important substance.

18. Which one of the following best expresses the main idea of the passage?

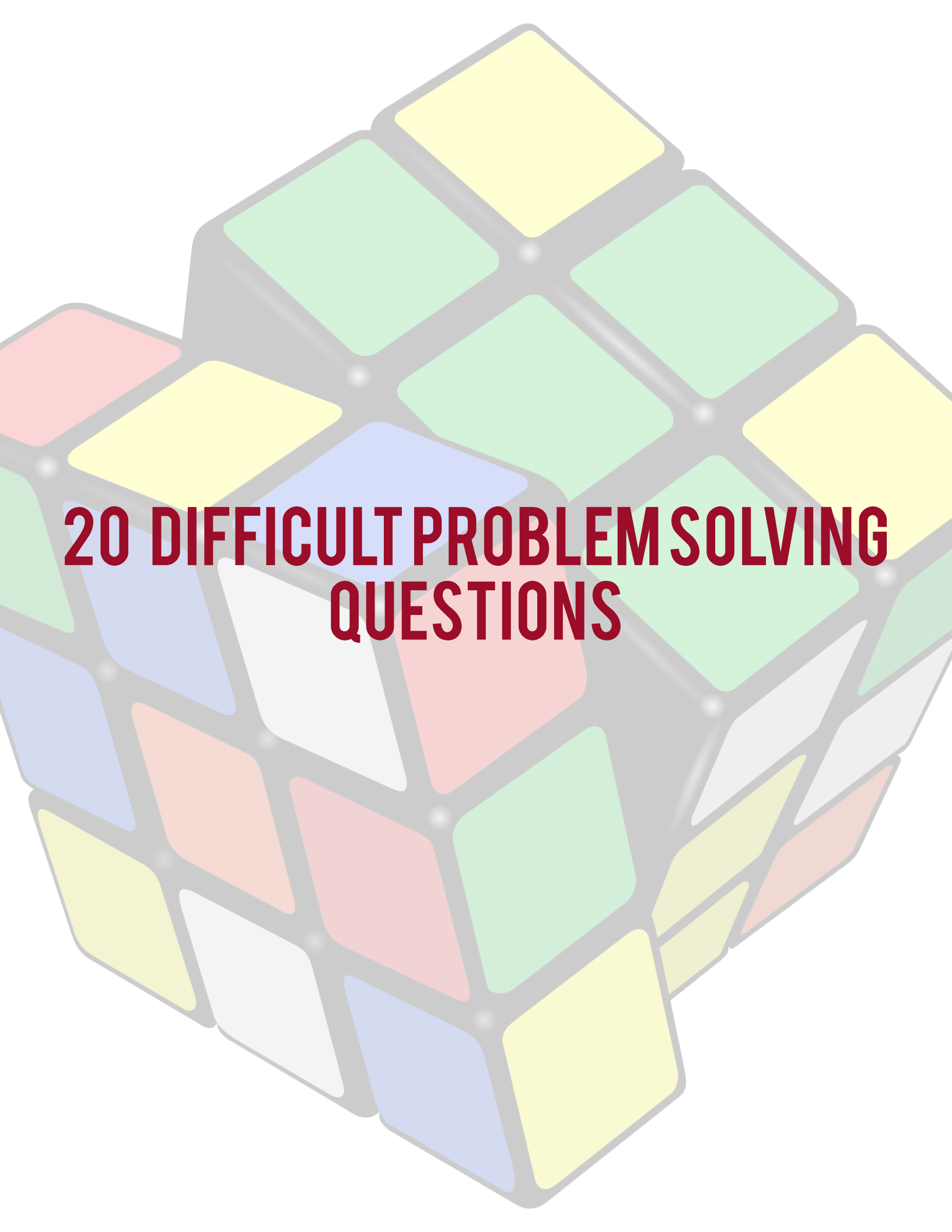
- A. The reduction in biodiversity is an irreversible process that represents a setback both for science and for society as a whole.
- B. The material and cultural wealth of a nation are insignificant when compared with the country's biological wealth.
- C. The enormous diversity of life on Earth could not have come about without periodic extinctions that have conferred pre-eminence on one species at the expense of another.
- D. The human species is in the process of initiating a massive extinction episode that may make past episodes look minor by comparison.
- E. The current decline in species diversity is human-induced tragedy of incalculable proportions that has potentially grave consequences for the human species.

19. The author mentions the Nile perch in order to provide an example of

- A. a species that has become extinct through human activity.
- B. the typical lack of foresight that has led to biogeographic disaster.
- C. a marine animal species that survived the Permian extinctions.
- D. a species that is a potential source of material wealth.
- E. the kind of action that is necessary to reverse the decline in species diversity.

20. All of the following are explicitly mentioned in the passage as contributing to the extinction of species EXCEPT

- A. hunting
- B. pollution
- C. deforestation
- D. the growth of human populations
- E. human-engineered changes in the environment



20 DIFFICULT PROBLEM SOLVING QUESTIONS

1. 70, 75, 80, 85, 90, 105, 105, 130, 130, 130

The list shown consist of the times, in seconds, that it took each of 10 school children to run a distance of 400 meter. If the SD of ten running times is 22.4 seconds, rounded to nearest tenth of second, how many of the 10 running times is more than one SD below the mean of the 10 running times?

- A. One
- B. Two
- C. Three
- D. Four
- E. Five

2. At a certain supplier, a machine of type A costs \$20,000 and a machine of type B costs \$50,000. Each machine can be purchased by making a 20 percent down payment and repaying the remainder of the cost and the finance charges over a period of time. If the finance charges= 40 percent of the remainder of the cost, how much less would 2 machines of type A cost than 1 machine of type B?

- A. \$10,000
- B. \$11,200
- C. \$12,000
- D. \$12,800
- E. \$13,200

3. For a certain race, 3 teams were allowed to enter 3 members each. A team earned $6 - n$ points whenever one of its members finished in n th place, where $1 \leq n \leq 5$. There were no ties, disqualifications, or withdrawals. If no team earned more than 6 points, what is the least possible score a team could have earned?

- A. 0
- B. 1
- C. 2
- D. 3
- E. 4

4. On his drive to work, Leo listens to one of three radio stations A, B or C. He first turns to A. If A is playing a song he likes, he listens to it; if not, he turns it to B. If B is playing a song he likes, he listens to it; if not, he turns it to C. If C is playing a song he likes, he listens to it; if not, he turns off the radio. For each station, the probability is 0.30 that at any given moment the station is playing a song Leo likes. On his drive to work, what is the probability that Leo will hear a song he likes?

- A. 0.027
- B. 0.090
- C. 0.417
- D. 0.657
- E. 0.900

5. Of the 800 employees of Company X, 70 percent have been with the company for at least ten years. If y of these "long-term" members were to retire and no other employee changes were to occur, what value of y would reduce the percent of "long-term" employees in the company to 60 percent?

- A. 200
- B. 160
- C. 112
- D. 80
- E. 56

6. A certain business produced x rakes each month from November through February and shipped $x/2$ rakes at the beginning of each month from March through October. The business paid no storage costs for the rakes from November through February, but it paid storage costs of \$0.10 per rake each month from March through October for the rakes that had not been shipped. In terms of x , what was the total storage cost, in dollars, that the business paid for the rakes for the 12 months from November through October?

- A. $0.40x$
- B. $1.20x$
- C. $1.40x$
- D. $1.60x$
- E. $3.20x$

7. A boat traveled upstream 90 miles at an average speed of $(v-3)$ miles per hour and then traveled the same distance downstream at an average speed of $(v+3)$ miles per hour. If the trip upstream took a half hour longer than the trip downstream, then how many hours did it take the boat to travel downstream?

- A. 2.5
- B. 2.4
- C. 2.3
- D. 2.2
- E. 2.1

8. A certain library assesses fines for overdue books as follows. On the first day that a book is overdue, the total fine is \$0.10. For each additional day that the book is overdue, the total fine is either increased by \$0.30 or doubled, whichever results in the lesser amount. What is the total fine for a book on the fourth day it is overdue?

- A. \$0.60
- B. \$0.70
- C. \$0.80
- D. \$0.90
- E. \$1.00

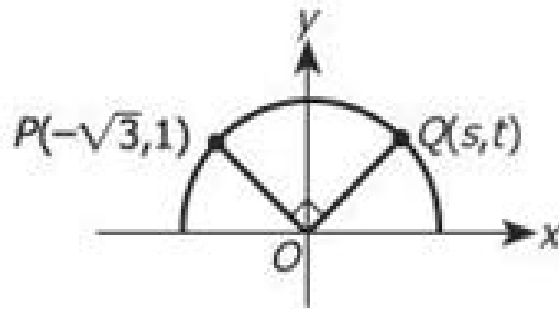
9. The rate of a certain chemical reaction is directly proportional to the square of the concentration of chemical A present and inversely proportional to the concentration of chemical B present. If the concentration of chemical B is increased by 100%, which of the following is closest to the percent change in the concentration of chemical A required to keep the reaction rate unchanged?

- A. 100% decrease
- B. 50% decrease
- C. 40% decrease
- D. 40% increase
- E. 50% increase

10. A thin piece of wire 40 meters long is cut into two pieces. One piece is used to form a circle with radius r , and the other is used to form a square. No wire is left over. Which of the following represents the total area, in square meters, of the circular and square regions in terms of r ?

- A. πr^2
- B. $\pi r^2 + 10$
- C. $\pi r^2 + 1/(4 \pi^2 r^2)$
- D. $\pi r^2 + (40 - 2 \pi r)^2$
- E. $\pi r^2 + (10 - 1/(2 \pi r))^2$

11.



In the figure above, points P and Q lie on the circle with center O. What is the value of s ?

- A. $1/2$
- B. 1
- C. $\sqrt{2}$
- D. $\sqrt{3}$
- E. $\sqrt{2}/2$

12. A certain city with a population of 132,000 is to be divided into 11 voting districts, and no district is to have a population that is more than 10 percent greater than the population of any other district. What is the minimum possible population that the least populated district could have?

- A. 10,700
- B. 10,800
- C. 10,900
- D. 11,000
- E. 11,100

13. In a class of 30 students, 2 students did not borrow any books from the library, 12 students each borrowed 1 book, 10 students each borrowed 2 books, and the rest borrowed at least 3 books. If the average number of books per student was 2, what is the maximum number of books any single student could have borrowed?

- A. 3
- B. 5
- C. 8
- D. 13
- E. 15

14. The temperature of a certain cup of coffee 10 minutes after it was poured was 120 degrees Fahrenheit. If the temperature F of the coffee t minutes after it was poured can be determined by the formula $F = 120(2^{-at}) + 60$, where F is in degrees Fahrenheit and a is a constant. Then the temperature of the coffee 30 minutes after it was poured was how many degrees Fahrenheit?

- A. 65
- B. 75
- C. 80
- D. 85
- E. 90

15. Which of the following lists the number of points at which a circle can intersect a triangle?

- A. 2 and 6 only
- B. 2, 4 and 6 only
- C. 1, 2, 3 and 6 only
- D. 1, 2, 3, 4 and 6 only
- E. 1, 2, 3, 4, 5 and 6 only

16. Adam and Beth each drove from Smallville to Crown City by different routes. Adam drove an average speed of 40 miles per hour and completed the trip in 30 minutes. Beth's route was 5 miles longer, and it took her 20 minutes more than Adam to complete the trip. How many miles per hour was Beth's average speed on this trip?

- A. 24
- B. 30
- C. 48
- D. 54
- E. 75

17. When a certain tree was first planted, it was 4 feet tall, and the height of the tree increased by a constant amount each year for the next 6 years. At the end of the 6th year, the tree was $\frac{1}{5}$ taller than it was at the end of the 4th year. By how many feet did the height of the tree increase each year?

- A. $\frac{3}{10}$
- B. $\frac{2}{5}$
- C. $\frac{1}{2}$
- D. $\frac{2}{3}$
- E. $\frac{6}{5}$

18. If n and y are positive integers and $450y = n^3$, which of the following must be an integer?

- I. $y / (3 * 2^2 * 5)$
- II. $y / (3^2 * 2 * 5)$
- III. $y / 3 * 2 * 5^2$

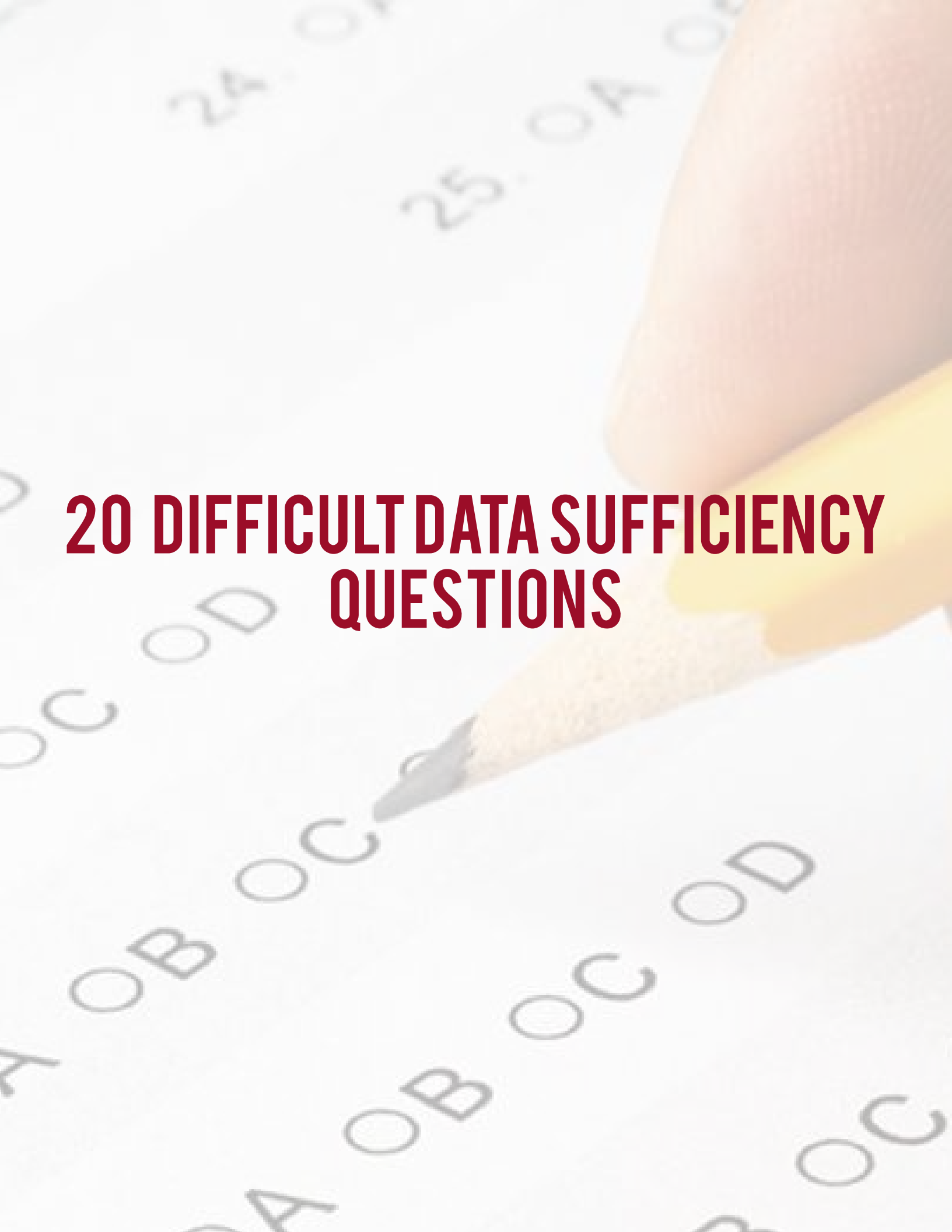
- A. None.
- B. I only.
- C. II only.
- D. III only.
- E. I, II, and III.

19. Company C has a machine that, working alone at its constant rate, processes 100 units of a certain product in 5 hours. If company c plans to buy a new machine that will process this product at a constant rate and if the two machines working together at their respective constant rates are to process 100 units of this product in 2 hours what should be the constant rate in units per hour of the new machine?

- A. 50
- B. 45
- C. 30
- D. 25
- E. 20

20. A set of 15 different integers has median of 25 and a range of 25. What is greatest possible integer that could be in this set?

- A. 32
- B. 37
- C. 40
- D. 43
- E. 50

A hand holding a yellow pencil is pointing at a document. The document contains several data sufficiency questions, each starting with 'OC' or 'OD'. The text '20 DIFFICULT DATA SUFFICIENCY QUESTIONS' is overlaid in the center in a bold, dark red font. The background is a light gray with a subtle pattern of the letters 'OC' and 'OD' repeated diagonally.

20 DIFFICULT DATA SUFFICIENCY QUESTIONS

1. Of the 60 animals on a certain farm, $\frac{2}{3}$ are either pigs or cows. How many of the animals are cows?

- (1) The farm has more than twice as many cows as it has pigs.
- (2) The farm has more than 12 pigs.

2. On Jane's credit card account, the average daily balance for a 30-day billing cycle is the average(arithmetic mean) of the daily balances at the end of each of the 30 days. At the beginning of a certain 30 -day billing cycle, Jane's credit card account had a balance of \$600. Jane made a payment of \$300 on the account during the billing cycle. If no other amounts were added to or subtracted from the account during the billing cycle, what was the average daily balance on Jane's account for the billing cycle?

- (1) Jane's payment was credited on the 21st day of the billing cycle.
- (2) The average daily balance through the 25th day of the billing cycle was \$540.

3. Machines X and Y work at their respective constant rates. How many more hours does it take machine Y, working alone, to fill a production order of a certain size than it takes machine X, working alone?

- (1) Machines X and Y, working together, fill a production order of this size in two-thirds the time that machine X, working alone, does.
- (2) Machine Y, working alone, fills a production order of this size in twice the time that machine X, working alone, does.

4. Is $1/(a - b) < b - a$?

(1) $a < b$.

(2) $1 < |a - b|$.

5. Is $\sqrt{x - 3} = 3 - x$

(1) $x \neq 3$

(2) $-x|x| > 0$

6. During a 40-mile trip, Marla travelled at an average speed of x miles per hour for the first y miles of the trip and at an average speed of $1.25x$ miles per hour for the last $40 - y$ miles of the trip. The time that Marla took to travel the 40 miles was what percent of the time it would have taken her if she had travelled at an average speed of x miles per hour for the entire trip?

(1) $x = 48$

(2) $y = 20$

7. If it took Carlos $1/2$ hour to cycle from his house to the library yesterday, was the distance that he cycled greater than 6 miles? (Note: 1 mile = 5,280 feet)

(1) The average speed at which Carlos cycled from his house to the library yesterday was greater than 16 feet per second.

(2) The average speed at which Carlos cycled from his house to the library yesterday was less than 18 feet per second.

8. If the integers a and n are greater than 1 and the product of the first 8 positive integers is a multiple of a^n , what is the value of a ?

(1) $a^n = 64$

(2) $n = 6$

9. Is $|x-y| > |x| - |y|$?

(1) $y < x$

(2) $xy < 0$

10. If Bob produces 36 or fewer items in a week, he is paid X dollars per item. If Bob produces more than 36 items in a week, he is paid X dollars per item for the first 36 items and $\frac{3}{2}$ times that amount for each additional item. How many items did Bob produce last week?

(1) Last week Bob was paid total of \$480 for the items that he produced that week.

(2) This week Bob produced 2 items more than last week and was paid a total of \$510 for the items that he produced this week.

11. Circle C and line k lie in the xy-plane. If circle C is centered at the origin and has radius 1, does line k intersect circle C?

- (1) The x-intercept of line k is greater than 1.
- (2) The slope of line k is $-(1/10)$.

12. If n is a positive integer and r is the remainder when $(n-1)(n+1)$ is divided by 24, what is the value of r?

- (1) n is not divisible by 2
- (2) n is not divisible by 3

13. A manufacturer produced x percent more video cameras in 1994 than in 1993 and y percent more in 1995 than in 1994. If the manufacturer produced 1,000 video cameras in 1993, how many video cameras did the manufacturer produce in 1995?

- (1) $xy = 20$
- (2) $x + y + xy/100 = 9.2$

14. If $mv < pv < 0$, is $v > 0$?

- (1) $m < p$
- (2) $m < 0$

15. If the prime numbers p and t are the only prime factors of the integer m , is m a multiple of p^2t ?

(1) m has more than 9 positive factors.

(2) m is a multiple of p^3

16. Is $1/p > r/(r^2 + 2)$?

(1) $p = r$

(2) $r > 0$

17. Whenever Martin has a restaurant bill with an amount between \$10 and \$99, he calculates the dollar amount of the tip as 2 times the tens digit of the amount of his bill. If the amount of the Martin's most recent restaurant bill was between \$10 and \$99, was the tip calculated by the martin on this bill greater than 15 percent of the amount of the bill?

(1) The amount of the bill was between \$15 and \$50

(2) The tip calculated by the martin was \$8

18. For Manufacturer M, the cost C of producing X units of its product per month are given by $C = kx + t$, where C is in dollars and k and t are constants. Last month, if Manufacturer M produced 1,000 units of its product and sold all the units for $k + 60$ dollars each, what was manufacturer M's gross profit on the 1000 units?

(1) Last month, Manufacturer M's revenue from the sale of the 1000 units was \$150,000

(2) Manufacturer M's cost of producing 500 units in a month is \$45,000 less than its cost of producing 1,000 units in a month.

19. If y is an integer and $y = |x| + x$, is $y = 0$?

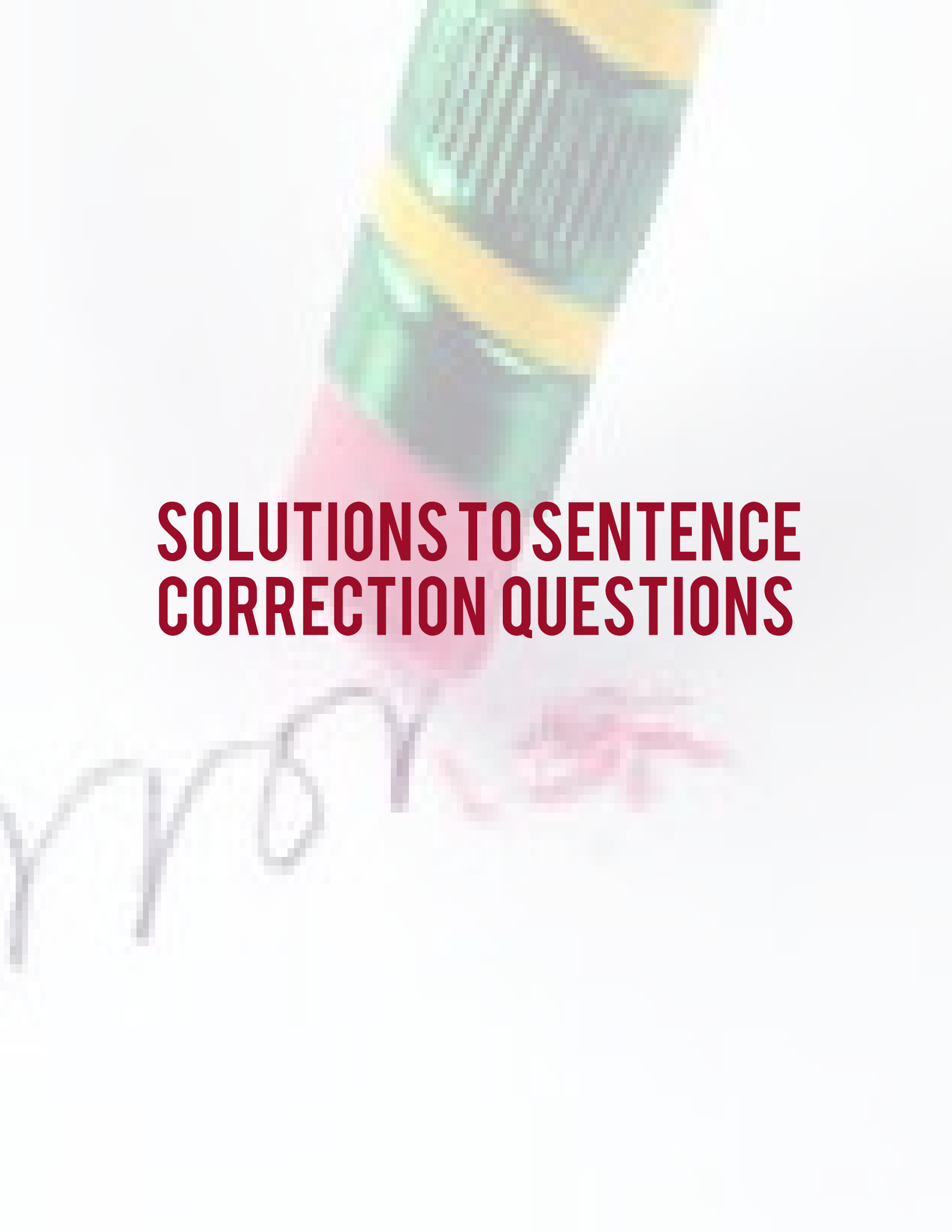
(1) $x < 0$

(2) $y < 1$

20. If $A < Y < Z < B$, is $|Y-A| < |Y-B|$?

(1) $|Z-A| < |Z-B|$

(2) $|Y-A| < |Z-B|$



SOLUTIONS TO SENTENCE CORRECTION QUESTIONS

1. When drive-ins were at the height of their popularity in the late 1950's, some 4,000 existed in the United States, but today there are less than one-quarter that many.

- A. there are less than one-quarter that many
- B. there are fewer than one-quarter as many
- C. there are fewer than one-quarter of that amount
- D. the number is less than one-quarter the amount
- E. it is less than one-quarter of that amount

Solution:

There is a clear split in the options of this question and the split is between "fewer" and "less". The former is used for countable quantities and the latter is used for uncountable quantities. Since we are talking about the number of drive-ins, "fewer" is the right choice here.

A – Uses "Less"

B – OA

C – Uses "Fewer" but uses "amount" . Amount is used for uncountable quantities.

D – Uses "Less" along with the "number"

E – Uses "Less" and also uses the ambiguous "it"

2. Socially and environmentally responsible investing is on the rise: last year in the United States, over \$2 trillion was invested in funds that screen companies according to a variety of criteria such as adherence to labour standards, protection of the environment, and observance of human rights.

- A. according to a variety of criteria such as
- B. according to a variety of such criteria, as by
- C. according to such a variety of criteria as by
- D. in accordance with such a variety of criteria as
- E. in accordance with a variety of criteria, such as by

Solution:

One thing to note here is the usage of the 'colon'. This means that the part after colon is describing the fact that some kind of investment is on the rise. Further, the sentence goes on to say that over \$2 trillion was invested in funds that screen companies according to a variety of criteria. Finally the sentence provides examples of the criteria.

A – OA

B – Incorrect usage - 'such criteria, as by'

C – Same as B

D – The phrase “such a variety” distorts the meaning of the sentence - it indicates that the items that follow are examples of the variety. However, the items that follow are actually examples of the criteria.

E – Same as B

3. The discovery that Earth's inner core rotates independently of and more quickly than Earth's outer layers is responsible for advancing studies of the flow of heat from the inner through the outer planet and of the formation and periodic reversal in direction of Earth's magnetic field.

A. core rotates independently of and more quickly than Earth's outer layers is responsible for advancing studies of the flow of heat from the inner through the outer planet and of the formation and periodic reversal in direction of Earth's magnetic field

B. core rotates independently of and more quickly than Earth's outer layers is responsible for advancing studies of how heat from the inner core flows through the outer planet, and the formation and periodic reversal in direction of Earth's magnetic field

C. core rotates independently and more quickly than Earth's outer layers are responsible for advancing studies of how heat from the inner core flows through the outer planet, and how Earth's magnetic field forms and the periodic reversal of its direction

D. core, rotating independently and more quickly than Earth's outer layers, are responsible for advancing studies of the flow of heat from the inner through the outer planet, and the formation and periodic reversal in direction of Earth's magnetic field

E. core, rotating independently of and more quickly than Earth's outer layers, is responsible for advancing studies of the flow of heat from the inner through the outer planet and of how Earth's magnetic field forms and the periodic reversal of its direction

Solution:

You can start solving this question by vertically scanning through the answer choices. Options A, B and C have the phrase "...core, rotates..." whereas Options D and E have the phrase "...core, rotating...".

Remember that a participial modifier will modify the entire preceding clause and will apply to the subject of the previous clause.

A – OA

B – This option is not parallel.

C – This is incorrect due to the usage of the verb in the phrase "...are responsible..". The right form has to be "...is responsible..."

D – Improper usage of the participial modifier.

E – Improper usage of the participial modifier.

4. The application of a new method for analysing the chemistry of tooth enamel allows scientists to examine molars of prehuman ancestors and determining that their diets were more varied than had been supposed.

A. The application of a new method for analysing the chemistry of tooth enamel allows scientists to examine molars of prehuman ancestors and determining

B. Through the application of a new method for analysing the chemistry of tooth enamel, the molars of prehuman ancestors were examined by scientists who determined

C. When they applied a new method for analysing the chemistry of tooth enamel, scientists examined molars of prehuman ancestors, determining

D. Applying a new method for analysing the chemistry of tooth enamel, the molars of prehuman ancestors have been examined by scientists, who determined

E. Applying a new method for analysing the chemistry of tooth enamel, scientists have examined molars of prehuman ancestors and determined

Solution:

There are a lot of concepts that are in play here. However, the first error that you would probably spot here would be the parallelism error between "...examine... and ...determining"..

A – Not parallel.

B – The modifier "Through the application....." modifies "molars" and changes the meaning of the sentence.

C – This changes the meaning of the sentence and introduces an unnecessary causality.

D – Wrong modifier. The phrase "Applying...." Modifies "molars". This phrase should have modified the scientists.

E – OA

5. The bones of Majungatholus atopus, a meat-eating dinosaur that is a distant relative of Tyrannosaurus rex and closely resembles South American predatory dinosaurs, have been discovered in Madagascar.

A. The bones of Majungatholus atopus, a meat-eating dinosaur that is a distant relative of Tyrannosaurus rex and closely resembles South American predatory dinosaurs, have been discovered in Madagascar.

B. The bones of a meat-eating dinosaur, Majungatholus atopus, a distant relative of Tyrannosaurus rex and with a close resemblance to South American predatory dinosaurs, has been discovered in Madagascar.

C. In Madagascar, the bones of a meat-eating dinosaur, Majungatholus atopus, distantly related to Tyrannosaurus rex and closely resembled South American predatory dinosaurs, have been discovered.

D. A distant relative of Tyrannosaurus rex, bearing a close resemblance to South American predatory dinosaurs is Majungatholus atopus, a meat-eating dinosaur, the bones of which have been discovered in Madagascar.

E. A distant relative of Tyrannosaurus rex and closely resembling South American predatory dinosaurs, the bones of a meat-eating dinosaur, Majungatholus atopus, have been discovered in Madagascar.

Solution:

There is nothing wrong in the given sentence. This means we hold onto Option A and move on to find errors with the other options.

A – OA

B – Subject Verb Agreement error – 'The bones'....'has been discovered.' It should be 'have been discovered'.

C – Distantly related and closely resembled are not parallel. You may interpret this as parallel. But 'closely resembled' is in the past tense, whereas 'distantly related' is not.

D – Ambiguous 'which' - It is not clear what 'which' is referring to.

E – Inappropriate usage of modifiers. The phrase "A distant relative..." modifies the bones.

6. The proliferation of so-called cybersquatters, people who register the Internet domain names of high-profile companies in hopes of reselling the rights to those names for a profit, led to passing the Anti-Cybersquatting Consumer Protection Act in 1999, allowing companies to seek up to \$100000 in damages against those who register domain names with the sole intent of selling them later.

A. passing the Anti-Cybersquatting Consumer Protection Act in 1999, allowing companies to seek up to \$100000 in damages against those who register domain names with the sole intent of selling them later.

B. the passage of the Anti-Cybersquatting Consumer Protection Act in 1999, which allows companies to seek up to \$100000 in damages against those who register domain names with the sole intent that they will sell.

C. the passage in 1999 of the Anti-Cybersquatting Consumer Protection Act, which allows companies to seek up to \$100000 in damages against those who register domain names with the sole intent of selling.

D. the Anti-Cybersquatting Consumer Protection Act, which was passed in 1999, and it allows companies to seek up to \$100000 in damages against those who register domain names with the sole intent to sell.

E. the Anti-Cybersquatting Consumer Protection Act, passed in 1999, and it allows companies to seek up to \$100000 in damages against those who register domain names with the sole intent of selling

Solution:

A – It's not clear what "allowing..." is referring to. Also, there is a split between Passing(gerund) and passage (noun). In such cases, the absolute noun is preferred. "them" is not required in the construction. It leads to ambiguity.

B – "which" incorrectly refers to 1999.

C – OA - Here, which correctly refers to the act.

D – "AND" implies that both sentences are independent of each other. Also this option distorts the meaning of the sentence. "proliferation hasn't led to the act".

E – Same as D.

7. Five hundred million different species of living creatures have appeared on Earth, nearly 99 percent of them vanishing.

A. Five hundred million different species of living creatures have appeared on Earth, nearly 99 percent of them vanishing.

B. Nearly 99 percent of five hundred million different species of living creatures that appeared on Earth have vanished.

C. Vanished are nearly 99 percent of the five hundred million different species of living creatures that appeared on Earth.

D. Of five hundred million different species of living creatures that have appeared on Earth, nearly 99 percent of them have vanished.

E. Of the five hundred million different species of living creatures that have appeared on Earth, nearly 99 percent have vanished.

Solution:

The concept tested in this sentence is tenses.

A – This option uses the wrong tense. The action depicted by the word “vanishing” is already over, and hence the usage of the “ing” form for the same is inappropriate.

B – This has a verb tense error. Using past tense changes the intended meaning of the sentence.

C – This option changes the meaning of the sentence.

D - 'of them' is redundant.

E – OA

8. Yellow jackets number among the 900 or so species of the world’s social wasps, wasps living in a highly cooperative and organized society where they consist almost entirely of females—the queen and her sterile female workers.

A. wasps living in a highly cooperative and organized society where they consist almost entirely of

B. wasps that live in a highly cooperative and organized society consisting almost entirely of

C. which means they live in a highly cooperative and organized society, almost all

D. which means that their society is highly cooperative, organized, and it is almost entirely

E. living in a society that is highly cooperative, organized, and it consists of almost all

Solution:

A – The pronoun “where” refers to organised society – This is wrong.

B – OA

C – Inappropriate usage of the modifier “which”. This tends refer to the wasps.

D – which should refer to the noun or noun phrase preceding the comma, but the noun preceding the commas in this choice doesn't make any sense in context.

E – There is a v+ing modifier that tends to modify the entire preceding clause and applies to Yellow Jackets. But it should actually modify social wasps.

9. The results of two recent unrelated studies support the idea that dolphins may share certain cognitive abilities with humans and great apes; the studies indicate dolphins as capable of recognizing themselves in mirrors—an ability that is often considered a sign of self-awareness—and to grasp spontaneously the mood or intention of humans.

A. dolphins as capable of recognizing themselves in mirrors—an ability that is often considered a sign of self-awareness—and to grasp spontaneously

B. dolphins’ ability to recognize themselves in mirrors—an ability that is often considered as a sign of self-awareness—and of spontaneously grasping

C. dolphins to be capable of recognizing themselves in mirrors—an ability that is often considered a sign of self-awareness—and to grasp spontaneously

D. that dolphins have the ability of recognizing themselves in mirrors—an ability that is often considered as a sign of self-awareness—and spontaneously grasping

E. that dolphins are capable of recognizing themselves in mirrors—an ability that is often considered a sign of self-awareness—and of spontaneously grasping

Solution:

A – Something can indicate a thing, or it can indicate an idea. If it indicates a thing, you simply use a noun: the signs indicate bumps. If it indicates an idea, which includes a verb, you need to add the word "that" to indicate there's a new clause (noun+verb) coming up.

B – Same as A

C – Same as B and A

D – 'capable of recognizing ' and 'spontaneously grasping' are not parallel. 'Considered as' is idiomatically wrong.

E– OA.

10. By recording the noise of crinkled wrappers as they were slowly stretched out in an otherwise silent chamber, and then digitizing and analyzing the sound emissions on computers, a team of scientists found the noise not continuous but consisted of individual bursts or pops just thousandths of a second long.

A. digitizing and analyzing the sound emissions on computers, a team of scientists found the noise not

B. digitizing and analyzing the sound emissions on computers, a team of scientists found that the noise was not

C. digitizing and analyzing the sound emissions on computers, a team of scientists found the noise not to be

D. the sound emissions were digitized and analyzed on computers, a team of scientists found that the noise was not

E. the sound emissions were digitized and analyzed on computers, a team of scientists found the noise not to be

Solution:

The concept tested here is parallelism. "By recording... and then digitising.." should be the right format.

A – "A team found the noise" – They didn't find the noise. They found something about the noise.

B - OA

C – Same as A.

D – Not parallel.

E – Not parallel.

11. Because of wireless service costs plummeting in the last year, and as mobile phones are increasingly common, many people now using their mobile phones to make calls across a wide region at night and on weekends, when numerous wireless companies provide unlimited airtime for a relatively small monthly fee.

A. Because of wireless service costs plummeting in the last year, and as mobile phones are increasingly common, many people

B. As the cost of wireless service plummeted in the last year and as mobile phones became increasingly common, many people

C. In the last year, with the cost of wireless service plummeting, and mobile phones have become increasingly common, there are many people

D. With the cost of wireless service plummeting in the last year and mobile phones becoming increasingly common, many people are

E. While the cost of wireless service has plummeted in the last year and mobile phones are increasingly common, many people are

Solution:

This question tests your understanding of parallelism. It also tests your skill in identifying all SV pairs in the sentence and your ability to select the choice that communicates the intended meaning.

A – This sentence is incomplete. There is no verb for the subject 'people'.

B – This sentence is incomplete. There is no verb for the subject 'people'.

C – This sentence says "...With X... there are many people" – This distorts the meaning of the sentence. Also, there is a parallelism error.

D – OA

E – The usage of 'while' distorts the meaning of the sentence. Also, there are two different verb tenses used - 'has plummeted' and 'are increasingly common'.

12. Sound can travel through water for enormous distances, prevented from dissipating its acoustic energy as a result of boundaries in the ocean created by water layers of different temperatures and densities.

A. prevented from dissipating its acoustic energy as a result of

B. prevented from having its acoustic energy dissipated by

C. its acoustic energy prevented from dissipating by

D. its acoustic energy prevented from being dissipated as a result of

E. preventing its acoustic energy from dissipating by

Solution:

A. prevented from dissipating its acoustic energy as a result of - changes the meaning. "Sound" is not prevented. "acoustic energy" is prevented from dissipating

B. from having... by erroneously suggests that the boundaries in the ocean are attempting to dissipate sound energy.

C. OA

D. 'being dissipated' seems to imply that there is some external factor that is causing the energy to dissipate, whereas the energy is just 'dissipating' on its own, during the sound's travel through water

E. This version of the sentence nonsensically explains that sound prevents the dissipation of its own energy.

13. A New York City ordinance of 1897 regulated the use of bicycles, mandated a maximum speed of eight miles an hour, required of cyclists to keep feet on pedals and hands on handlebars at all times, and it granted pedestrians right-of-way.

A. regulated the use of bicycles, mandated a maximum speed of eight miles an hour, required of cyclists to keep feet on pedals and hands on handlebars at all times, and it granted

B. regulated the use of bicycles, mandated a maximum speed of eight miles an hour, required cyclists to keep feet on pedals and hands on handlebars at all times, granting

C. regulating the use of bicycles mandated a maximum speed of eight miles an hour, required cyclists that they keep feet on pedals and hands on handlebars at all times, and it granted

D. regulating the use of bicycles, mandating a maximum speed of eight miles an hour, requiring of cyclists that they keep feet on pedals and hands on handlebars at all times, and granted

E. regulating the use of bicycles mandated a maximum speed of eight miles an hour, required cyclists to keep feet on pedals and hands on handlebars at all times, and granted

Solution:

The concept tested in this sentence is parallelism.

A – 'Mandated' and 'It granted' are not parallel.

B - "regulated the use of bicycles" SHOULD NOT be parallel to the other elements, because the ideas aren't parallel. All the other elements are a sub-set of the bicycle regulation.

C – Same as A.

D – 'Granted' is not parallel to the '-ing' forms.

E – OA.

14. Scholars who once thought Native American literatures were solely oral narratives recorded by missionaries or anthropologists now understand this body of work to consist of both oral literatures and the written works of Native American authors, who have been publishing since 1772.

A. Scholars who once thought Native American literatures were solely oral narratives

B. Scholars thinking of Native American literatures once solely as oral narratives, and

C. Scholars who once had thought of Native American literatures solely as oral narratives and

D. Native American literatures, which some scholars once thought were solely oral narratives

E. Native American literatures, which some scholars once, thinking they were solely oral Narratives

Solution:

The POE for this question is as follows.

A – OA

B – This option is not parallel

C – The usage of past perfect tense (had thought) is inappropriate.

D – This distorts the meaning of the sentence. According to this sentence, Native American Literatures are thinking, while it is the scholars who are supposed to do so.

E – This distorts the meaning of the sentence. According to this sentence, Native American Literatures are thinking, while it is the scholars who are supposed to do so.

15. Books in European libraries last longer than books in libraries in the United States because, although the climate in Europe is fairly humid, libraries there are not subjected to the extremes of temperature and humidity that damage collections in the United States.

A. because, although the climate in Europe is fairly humid, libraries there are not subjected to the extremes of temperature and humidity that

B. because, although the climate in Europe is fairly humid, libraries there are not subject of the extremes of temperature and humidity as those that

C. because, although the climate in Europe is fairly humid, libraries there are not subjected to the extremities of temperature and humidity as

D. because the climate in Europe is fairly humid, but still libraries there are not subject of the extremes of temperature and humidity as

E. because the climate in Europe is fairly humid, but libraries there are not subjected to the extremities of temperature and humidity such as those that

Solution:

A – OA

B – The books are subject TO extreme conditions. They aren't Subject OF conditions.

C – Sentence ends with 'temperature and humidity as damage collections in the US.' This is wrong.

D – Same as B.

E – The meaning conveyed is different when you say 'Books in European libraries last longer because the weather is humid in Europe.'

16. Unlike the body's inflammatory response to cuts and sprains, with widespread swelling and stiffness immobilizing the injured area until it heals, the body's response to sunburn is more localized and resulting in a distinct line dividing affected and unaffected areas of the skin.

A. with widespread swelling and stiffness immobilizing the injured area until it heals, the body's response to sunburn is more localized and resulting

B. where the injured area is immobilized with widespread swelling and stiffness until it has healed, sunburn generates a more localized response in the body, which results instead

C. with the injured area immobilized by means of widespread swelling and stiffness until healing, sunburn generates a more localized response in the body, one resulting

D. in which widespread swelling and stiffness immobilize the injured area until it has healed, the body's more localized response to sunburn results

E. in which widespread swelling and stiffness immobilize the injured area until healing, instead, the body's more localized response to sunburn results

Solution:

The concepts tested in this question are tenses, pronouns and comparisons.

A – 'Body's response to sunburn..is localized..and resulting in..' is not parallel.

B – Inappropriate usage of the word “Where”

C – Compares 'body's inflammatory response to cuts and sprains' with 'sunburn', which is incorrect. The comparison is actually between the body's response to cuts and sprains and the body's response to sunburn.

D – OA

E – The phrase “until healing” is inappropriate. “Until” is an indicator that one must use present perfect tense. Also, incorrect use of 'instead'.

17. The Kwakiutl recognized one social unit larger than the tribe—the confederacy, which was a cluster of loosely knit, informally related neighboring tribes who interacted with themselves more often than between other tribes.

- A. tribes who interacted with themselves more often than between
- B. tribes who interacted among each other more often than among
- C. tribes who interacted with one another more often than with
- D. tribes, interacting among each other more often than between
- E. tribes, interacting among one another more often than with

Solution:

The concepts tested here are pronouns and modifiers.

A – Tribes did not interact with themselves.

B – Each other is used only when there are two things that are talked about

C - OA

D – The verb+ing modifier starting with “interacting...” tends to modify confederacy; it is supposed to modify the tribes.

E – Same as D.

18. The fact of some fraternal twins resembling each other greatly and others looking quite dissimilar highlights an interesting and often overlooked feature of fraternal-twin pairs, namely they vary considerably on a spectrum of genetic relatedness.

A. The fact of some fraternal twins resembling each other greatly and others looking quite dissimilar highlights an interesting and often overlooked feature of fraternal-twin pairs, namely they vary considerably

B. That some fraternal twins resemble each other greatly while others look quite dissimilar highlights an interesting and often overlooked feature of fraternal-twin pairs, namely that they vary considerably

C. With some fraternal twins resembling each other greatly and others looking quite dissimilar, it highlights an interesting and often overlooked feature of fraternal-twin pairs, namely considerable variation

D. With some fraternal twins resembling each other greatly and others looking quite dissimilar, it is a fact that highlights an interesting and often overlooked feature of fraternal-twin pairs, namely a considerable variation

E. Because some fraternal twins resemble each other greatly and others look quite dissimilar, this fact highlights an interesting and often overlooked feature of fraternal twin pairs, namely they vary considerably

Solution:

A – "The fact of" is idiomatically incorrect; we'd have to say "The fact that" to even have a shot at correctness.

B – OA

C – While you can, in theory, start a sentence with "with some", a quick peek after the comma in both choices tells us the next part of the sentence begins with "it highlights" and "it is a fact". "It highlights" is almost certainly going to introduce a passive construction - bad style on the GMAT. Similarly, "it is a fact" is passive and can be ruled out.

D – Same as C

E – It's acceptable to begin a sentence with "because", but (E) has the same after-the-comma issue as (C) and (D) - "Because X, this fact highlights" makes no sense. Eliminate (E).

19. There are no legal limits, as there are for cod and haddock, on the size of monkfish that can be caught, a circumstance that contributes to their depletion through overfishing.

A. There are no legal limits, as there are for cod and haddock, on the size of monkfish that can be caught, a circumstance that contributes to their depletion through overfishing.

B. There are no legal limits on the size of monkfish that can be caught, unlike cod or haddock, a circumstance that contributes to depleting them because they are being overfished.

C. There are legal limits on the size of cod and haddock that can be caught, but not for monkfish, which contributes to its depletion through overfishing.

D. Unlike cod and haddock, there are no legal size limits on catching monkfish, which contributes to its depletion by being overfished.

E. Unlike catching cod and haddock, there are no legal size limits on catching monkfish, contributing to their depletion because they are overfished.

Solution:

The concept tested on this question is comparison.

A – OA

B – This option compares monkfish to cod or haddock, while it is supposed to compare the legal limits.

C – Inappropriate usage of the modifier “Which” as it refers to monkfish.

D – Wrong comparison. This compares cod, haddock with legal size limits.

E – Wrong comparison. This compares action (catching cod and haddock) with legal size.

20. According to a survey of graduating medical students conducted by the Association of American Medical Colleges, minority graduates are nearly four times more likely than are other graduates in planning to practice in socioeconomically deprived areas.

A. minority graduates are nearly four times more likely than are other graduates in planning to practice

B. minority graduates are nearly four times more likely than other graduates who plan on practicing

C. minority graduates are nearly four times as likely as other graduates to plan on practicing

D. it is nearly four times more likely that minority graduates rather than other graduates will plan to practice

E. it is nearly four times as likely for minority graduates than other graduates to plan to practice

Solution:

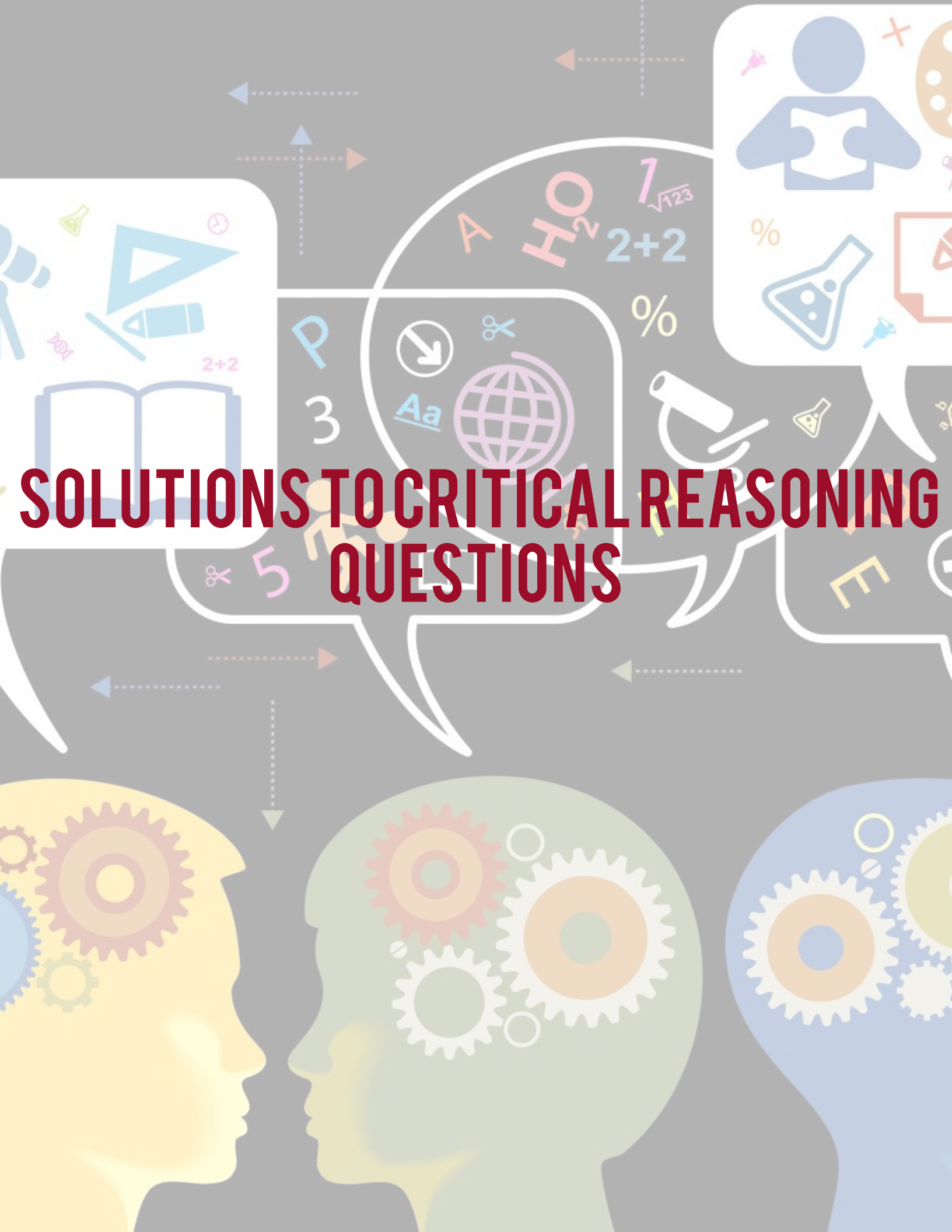
A – The phrase “in planning to practice” is awkward because the intention is to plan and not to practice. Hence “planning” must be in the infinitive form.

B – The relative pronoun “who” in this option refers to the other graduates. According to the sentence it is supposed to be referring to the minority graduates.

C – OA

D – Eliminated due to the inappropriate usage of “it”.

E – Same as D.



SOLUTIONS TO CRITICAL REASONING QUESTIONS



1. Twenty years ago, Balzania put in place regulations requiring operators of surface mines to pay for the reclamation of mined-out land. Since then, reclamation technology has not improved. Yet, the average reclamation cost for a surface coal mine being reclaimed today is only four dollars per ton of coal that the mine produced, less than half what it cost to reclaim surface mines in the years immediately after the regulations took effect.

Which of the following, if true, most helps to account for the drop in reclamation costs described?

- A. Even after Balzania began requiring surface mine operators to pay reclamation costs, coal mines in Balzania continued to be less expensive to operate than coal mines in almost any other country.
- B. In the twenty years since the regulations took effect, the use of coal as a fuel has declined from the level it was at in the previous twenty years.
- C. Mine operators have generally ceased surface mining in the mountainous areas of Balzania because reclamation costs per ton of coal produced are particularly high for mines in such areas.
- D. Even after Balzania began requiring surface mine operators to pay reclamation costs, surface mines continued to produce coal at a lower total cost than underground mines.
- E. As compared to twenty years ago, a greater percentage of the coal mined in Balzania today comes from surface mines.

Solution:

Twenty years ago-----Operators started paying for reclamation of mined land

Since then-----Reclamation technology has not improved

Now-----However, the reclamation cost has reduced to less than half.

Let's use POE to get to the right answer choice:

A) This answer choice talks about reclamation costs in comparison to other countries. This comparison cannot explain why the average cost in Balzania has gone down, so this answer is out of context.

B) The demand for coal has gone down. But that should not affect the reclamation cost in any way. So, this one too can be eliminated.

D) No information about underground mines is mentioned in the argument, so this clearly cannot explain the dip in average cost. So, this choice can be easily eliminated.

E) The word "percentage" makes it quite easy an answer choice to be considered for elimination. Percentage here is a problem as the numbers are not known. Even though the percentage has gone up, it is quite possible that the number of mines has not changed. And even if the number has changed, this fact does not have a direct bearing on the average reclamation cost per mine. So this answer choice too can be eliminated.

We are left with C – which happens to be the right answer choice.

Let's look at it closely:

Mountainous mines have a higher reclamation cost -----> Many of these mines have ceased to run -----> So if the costlier ones have ceased operations, then that should definitely bring down the overall reclamation cost, and hence bring down the average. Hence this is the right answer choice.

2. With a record number of new companies starting up in Derderia and with previously established companies adding many jobs, a record number of new jobs were created last year in the Derderian economy. This year, previously established companies will not be adding as many new jobs overall as such companies added last year. Therefore, unless a record number of companies start up this year, Derderia will not break its record for new jobs created.

Which of the following is an assumption on which the argument relies?

A. Each year, new companies starting up create more new jobs overall than do previously established companies.

B. Companies established last year will not add a greater number of jobs overall this year than they did last year.

C. This year, the new companies starting up will not provide substantially more jobs per company than did new companies last year.

D. This year, the overall number of jobs created by previously established companies will be less than the overall number of jobs lost at those companies.

E. The number of jobs created in the Derderian economy last year was substantially larger than the number of jobs lost last year.

Solution:

Last Year

Record number of new companies started up + new jobs added by old companies ----> Record number of jobs

This Year

Unless record number of companies start -----> Derderia will not break last year's record for new jobs created.

Let's use POE to get to the right answer choice:

A) Look at the words "EACH YEAR". In the argument, we are discussing only this year with respect to the previous year. No information about other years is mentioned. So this can be eliminated right away.

B) This answer choice (Companies established last year will not add a greater number of jobs overall this year than they did last year) - is simply a sub-set of what is already mentioned in the question-stem -

"This year, previously established companies will not be adding as many new jobs overall as such companies added last year"

D) This answer choice talks about number of jobs created versus number of jobs lost. Jobs lost don't affect the conclusion in any way. This one is therefore irrelevant and can be eliminated.

E) This one too can be eliminated for the same reason as the answer choice D.

We are left with C which happens to be the right one. Let us examine this closely.

Let's negate it and see what happens:

"The new companies starting up will provide substantially more jobs per company than did new companies last year"

If new companies will provide more jobs on an average, as compared to the previous year, then there is no need for a record number of companies to startup to break last year's record for the total number of jobs. A smaller number of companies would do.

The argument relies on the assumption that this is not the case.

This one hits the bull's eye and is the right answer.

3. A diet high in saturated fats increases a person's risk of developing heart disease. Regular consumption of red wine reduces that risk. Per-capita consumption of saturated fats is currently about the same in France as in the United States, but there is less heart disease there than in the United States because consumption of red wine is higher in France.

The difference in regular red-wine consumption has been narrowing, but no similar convergence in heart-disease rates has occurred.

Which of the following, if true, most helps to account for the lack of convergence noted above?

A. Consumption of saturated fats is related more strongly to the growth of fatty deposits on artery walls, which reduce blood flow to the heart, than it is to heart disease directly.

B. Over the past 30 years, per-capita consumption of saturated fats has remained essentially unchanged in the United States but has increased somewhat in France.

C. Reports of the health benefits of red wine have led many people in the United States to drink red wine regularly.

D. Cigarette smoking, which can also contribute to heart disease, is only slightly more common in France than in the United States.

E. Regular consumption of red wine is declining dramatically among young adults in France, and heart disease typically does not manifest itself until middle age.

Solution:

Facts presented in the question-

1. Diet high in saturated fat -----à Increases risk of Heart Disease
 2. Regular consumption of red wine -----à Reduces risk of Heart Disease
 3. France per capita consumption of Saturated Fats is equivalent to US per capita consumption of Saturated Fats.
 4. France red wine consumption is greater than US red wine consumption.
 5. Because of facts 3. and 4. , Heart disease in France < Heart Disease in the US.
- Difference in the wine consumption between the two countries is reducing but this is not resulting in reduced difference in heart disease.

This is a paradox question. Let's look at the answer choices for the one that best that resolves this paradox:

- A. This choice talks about something that is not relevant to the argument. So eliminate it in the first go.
- B. This answer choice talk about data over the course of 30 years. But the argument does not relate to that in any way. So this answer choice also should be eliminated quickly.
- C. This answer choice repeats the fact that more number of people in US have started consuming wine but it does not explain the paradox. So this too can be eliminated.
- D. This talks about relation between cigarette smoking and heart-disease with respect to US and France. But again it does not resolve the paradox.

We are left with answer choice E:

It says that red wine consumption is rapidly declining among the young adults. This is what is narrowing the gap in consumption of red wine. And heart disease manifests only in middle age. This means that in France, most of the wine is now being drunk by people who ARE susceptible to heart disease. Therefore, this consumption is more effective in bringing down the number of people with heart disease as compared to consumption in the US.

Therefore E is the right answer choice.

4. Although exposure to asbestos is the primary cause for mesothelioma, a slow-developing cancer, researchers believe that infection by the SV40 virus is a contributing factor, since in the US, 60 percent of tissue samples from mesotheliomas, but none from healthy tissue, contain SV40. SV40 is a monkey virus; however, in 1960, some polio vaccine was found contaminated with the virus. Researchers hypothesize that this vaccine was the source of the virus found in mesotheliomas decades later.

Which of the following, if true, most strongly supports the researchers' hypothesis?

- A. SV40 is widely used as a research tool in cancer laboratories.
- B. Changes in the technique of manufacturing the vaccine now prevent contamination with SV40.
- C. Recently discovered samples of the vaccine dating from 1960 still show traces of the virus.
- D. In a small percentage of cases of mesothelioma, there is no history of exposure to asbestos.
- E. In Finland, where the polio vaccine was never contaminated, samples from mesotheliomas do not contain SV40.

Solution:

Exposure to asbestos -----> Mesothelioma

Hypothesis: 1960 Polio Vaccine-----> source of SV40, which could be a contributing factor to Mesothelioma.

Let's look at the answer choices:

- A. The answer choice talks about the present day. Whereas the argument is discussing about the introduction of the virus SV40 through a vaccine that was used in 1960. So this answer choice is irrelevant. And can be easily eliminated.
- B. For the same reason as above even this answer choice can be eliminated.
- C. The fact that the contaminated vaccines still show traces of the virus does not prove that the vaccine was the source of the virus found in mesotheliomas – Hence this answer option can be eliminated.
- D. This answer does touch the argument in some way. It says that some patients of mesothelioma did get infected by something other than asbestos. But what caused mesothelioma in their case is not clearly mentioned here. So let us hold on to this answer option for now.
- E. This one clearly mentions that when there was certainty about non-contamination of vaccine, none of the patients were found infected with SV40. So this confirms the fact that Polio vaccine was indeed the source of SV40.

Answer choice E is more clear and strong as an answer choice compared to answer choice D. Hence E is the OA.

5. In general, jobs are harder to get in times of economic recession because many businesses cut back operations. However, any future recessions in Vargonia will probably not reduce the availability of teaching jobs at government-funded schools. This is because Vargonia has just introduced a legal requirement that education in government-funded schools be available, free of charge, to all Vargonian children regardless of the state of the economy, and that current student-teacher ratios not be exceeded.

Which of the following, if true, most strengthens the argument?

A. The current student-teacher ratio at Vargonia's government-funded schools is higher than it was during the most recent period of economic recession.

B. During recent periods when the Vargonian economy has been strong, almost 25 percent of Vargonian children have attended privately funded schools, many of which charge substantial fees.

C. Nearly 20 percent more teachers are currently employed in Vargonia's government-funded schools than had been employed in those schools in the period before the last economic recession.

D. Teachers in Vargonia's government-funded schools are well paid relative to teachers in most privately funded schools in Vargonia, many of which rely heavily on part-time teachers.

E. During the last economic recession in Vargonia, the government permanently closed a number of the schools that it had funded.

Solution:

- A. Completely irrelevant as it talks about previous recessions.
- C. Completely irrelevant as it talks about previous recessions.
- D. Answer choice D is again irrelevant because it compares the pay of government funded school teachers with the pay of private school teachers.
- E. Completely irrelevant as it talks about previous recessions.

Answer choice (B) states that at present when the economy is strong – 25% of the kids are attending private school. So it can be inferred that in future when there is recession, these kids will shift to government schools. And therefore the requirement of school teachers would be more as it is mandatory to keep the student-teacher ratio a constant. Hence B is the OA.

6. Outbreaks of Rift Valley fever occur irregularly in East Africa, several years apart. When outbreaks do occur, they kill thousands of cattle. A livestock vaccine against the disease exists but is rarely used. It is too expensive for farmers to use routinely, and since it is not effective until a month after vaccination, administering it after an outbreak begins helps very little. Nevertheless, experts predict that use of the vaccine will increase significantly within the next few years.

Which of the following, if true, provides the strongest justification for the experts' prediction?

- A. Rift Valley fever is spread by mosquitoes, but each outbreak is so widespread that it is impractical to control it by using insecticides.
- B. When an outbreak of Rift Valley fever occurs, unaffected countries often refuse to import livestock from the countries affected by the outbreak.
- C. It would take less than a month for producers of the vaccine to adjust their production operations to cope with a large increase in demand.
- D. Many cattle farmers in East Africa are nomadic or live in remote villages, and such farmers, who have little access to modern veterinary medicine, are particularly hard hit by outbreaks of Rift Valley fever.
- E. Recently published research has shown that certain identifiable climatic conditions are almost invariably followed, within two to five months, by an outbreak of Rift Valley fever.

Solution:

Rift Valley Fever:

Occurs irregularly and several years apart.

Kills thousands of cattle.

Vaccination is available but it's not sold because:

Timing of the outbreak is unknown

Effective only after a month of being administered

Let's look at the answer choices:

A. Irrelevant – Because it does not touch upon how the vaccinations will become effective or why the usage of vaccinations will increase.

B. Irrelevant – The unaffected countries won't need the vaccine anyway. And as far as the affected countries are concerned – there is no new information that explains why the vaccination will be more used.

C. This answer choice talks about the time when the vaccine demand will increase. But the question is about *what conditions need to exist* for the demand to increase. So this one too can be eliminated.

D. This one talk about the plight of farmers when the disease hits the village. Not relevant again to the question.

E. This one helps the farmers predict the outbreak of disease two to five months earlier. So, the farmers can use the vaccination, which takes only one month to start functioning. This will induce the farmers to use the vaccination as soon as the climactic changes happen, thereby increasing the usage of the vaccination.

Hence, E is the OA.

7. The traditional treatment for strep infections has been a seven-day course of antibiotics, either penicillin or erythromycin. However, since many patients stop taking those drugs within three days, reinfection is common in cases where those drugs are prescribed. A new antibiotic requires only a three-day course of treatment. Therefore, reinfection will probably be less common in cases where the new antibiotic is prescribed than in cases where either penicillin or erythromycin is prescribed.

Which of the following, if true, most strengthens the argument?

- A. Some of the people who are allergic to penicillin are likely to be allergic to the new antibiotic.
- B. A course of treatment with the new antibiotic costs about the same as a course of treatment with either penicillin or erythromycin.
- C. The new antibiotic has been shown to be effective in eradicating bacterial infections other than strep.
- D. Some physicians have already begun to prescribe the new antibiotic instead of penicillin or erythromycin for the treatment of some strep infections.
- E. Regardless of whether they take a traditional antibiotic or the new one, most patients feel fully recovered after taking the drug for three days.

Solution:

The conclusion in the question stem is that reinfection will probably be less common in cases where new antibiotic is prescribed than in cases where Penicillin or Erythromycin is prescribed.

The premises supporting this:

- 1) New Antibiotic requires only three days to cure the disease.
- 2) Even though Penicillin or Erythromycin requires a 7 day treatment, people still stop taking them after three days - this leads to reinfection.

Now if you look at answer choices:

A - Talks about allergy to these antibiotics - irrelevant.

B - Talks about cost - irrelevant to the argument.

C - Talks about efficacy of the new drug in battling other infections - but the argument is only about strep. Therefore irrelevant.

D - Talks about new antibiotic and Penicillin or Erythromycin but does it strengthen the conclusion in any way? – The answer is "NO"

E- says most patients "FEEL" fully recovered after taking the drug for 3 days, no matter whether they take the old drug or the new. If this is true, the patients are likely to act in a similar fashion – that is, they are likely to take the drug for 3 days, regardless of which drug it is. If they take the new antibiotic for 3 days, they are most likely to get cured, and thereby avoid reinfection.

Option E is thus the correct answer. It gives an explanation behind the patient's behaviour of taking the drug for three days and also provides substantiation that the patients will not alter their pill taking habit with the new drug.

E is the OA.

8. Driving the steep road to the mountain-top Inca ruins of Machu Picchu is potentially dangerous and hiking there is difficult. Now the Peruvian government is installing a cable car that will make access much easier, and hence result in a large increase in tourism. However, since the presence of large numbers of tourists tends to accelerate the deterioration of a site, installation of the cable car is certain to result in harm to the ruins.

Which of the following, if true, most seriously calls into question the argument?

- A. The daily number of tourists that are expected to take the cable car to Machu Picchu is smaller than the original resident population of Incas.
- B. The construction of the cable car terminal at Machu Picchu will require the use of potentially damaging heavy machinery at the site.
- C. Machu Picchu is already one of the most popular tourist sites in Peru.
- D. Natural weathering will continue to be a more significant cause of the deterioration of Machu Picchu than tourist traffic.
- E. The cable car will replace the tour buses whose large wheels and corrosive exhaust at present do significant damage to the site.

Solution:

A - This option says that the number of tourists is less than the residents of that place. Since the argument cites tourists as a reason for the harm and not the residents, it does not matter how many tourists there are in comparison to residents.

B strengthens the argument rather than weakening it.

C is irrelevant – the fact that Machu Picchu is already popular does not have anything to do with the cable cars and their impact on the site.

D is irrelevant – Natural weathering as a cause of deterioration does not have a bearing on the installation of a cable car

E : The argument tells us that if the number of tourists increase, the harm also increases. And the means by which the number of tourists are likely to increase is the introduction of the cable car. Hence in some way or the other, the cable car is responsible for the harm.

Hence, if we would want to negate the argument, we would say that the cable car is actually resulting in less damage as compared to its alternative. This is what E does.

9. Delta Products Inc. has recently switched at least partly from older technologies using fossil fuels to new technologies powered by electricity.

The question has been raised whether it can be concluded that for a given level of output Delta's operation now causes less fossil fuel to be consumed than it did formerly. The answer, clearly, is yes, since **the amount of fossil fuel used to generate the electricity needed to power the new technologies is less than the amount needed to power the older technologies, provided level of output is held constant.**

In the argument given, the two boldfaced portions play which of the following roles?

- A. The first identifies the content of the conclusion of the argument; the second provides support for that conclusion.
- B. The first provides support for the conclusion of the argument; the second identifies the content of that conclusion.
- C. The first states the conclusion of the argument; the second calls that conclusion into question.
- D. The first provides support for the conclusion of the argument; the second calls that conclusion into question.
- E. Each provides support for the conclusion of the argument.

Solution:

The conclusion is that less fossil fuel is now consumed than was consumed earlier. This is what the second bold-faced sentence states.

- A. Can be eliminated right away as the second sentence is the conclusion and not something that provides support for the conclusion.
 - C. Can be eliminated right away as the second sentence is the conclusion and not something that questions the conclusion.
 - D. Can be eliminated right away as the second sentence is the conclusion and not something that questions the conclusion.
 - E.) Answer choice (E) also can be eliminated as one of the bold-faced sentences is the conclusion.
- (B) is indeed the right answer as it points out the first sentence to be the one that supports the conclusion and second part to be the content of the conclusion.

10. Lyme disease is caused by a bacterium transmitted to humans by deer ticks. Generally, deer ticks pick up the bacterium while in the larval stage by feeding on infected white-footed mice. However, certain other species on which the larvae feed do not harbour the bacterium. If the population of these species increased, more of the larvae would be feeding on uninfected hosts, so the number of ticks acquiring the bacterium would likely decline.

Which of the following would it be most important to ascertain in evaluating the argument?

- A. Whether populations of the other species on which deer tick larvae feed are found only in the areas also inhabited by white-footed mice.
- B. Whether the size of the deer tick population is currently limited by the availability of animals for the tick's larval stage to feed on.
- C. Whether the infected deer tick population could be controlled by increasing the number of animals that prey on white-footed mice.
- D. Whether deer ticks that were not infected as larvae can become infected as adults by feeding on deer on which infected deer ticks have fed.
- E. Whether the other species on which deer tick larvae feed harbour any other bacteria that ticks transmit to humans.

Solution:

(Mice) -> (deer tick larvae) -> (humans) -> leads to Lyme disease
(other species X) -> (deer tick larvae) -> humans -> no Lyme disease

Conclusion: If we were to increase the population of X, the number of deer ticks acquiring the bacterium would decrease. Please note that the argument does not say that the number of deer ticks acquiring the bacterium would go down to zero - some deer ticks will still feed on white mice.

What additional information do we need to evaluate this conclusion?

A. How does it matter whether X and white mice are both found in the same areas or different areas? Not helpful to evaluate this conclusion.

C. We are evaluating this particular conclusion - an alternative method to control infected deer tick population will not help us here.

D. We are talking about a particular case in which the infection happens during feeding at the larval stage - whether the ticks get infected as adults is extraneous to evaluate this particular conclusion.

E. Other bacteria - out of scope. We are talking only about Lyme disease bacterium.

Leaving us with the right answer choice B: B says that it would be useful for us to know whether the size of the deer tick population is currently limited by the availability of animals for the tick larvae to feed on. Let us answer this question both ways:

1. Yes, the tick population is currently limited by the availability of animal food for the larvae to feed on. This means that the tick larvae have limited feeding options. So if we increase the population of X, over time, more and more tick larvae will feed on X (which is bacterium-free).

2. No, the tick population has plenty of animal food available for the larvae to feed on. This means that an increase in the population of X may not have much impact on the population of deer ticks.

This information does help us evaluate the conclusion of the argument.

In this question, keep things simple and try the process of elimination - you will be able to zero in on B.

11. Plant scientists have been able to genetically engineer vegetable seeds to produce crops that are highly resistant to insect damage. Although these seeds currently cost more than conventional seeds, their cost is likely to decline. Moreover, farmers planting them can use far less pesticide and most consumers prefer vegetables grown with less pesticide, therefore, for crops for which these seeds can be developed, their use is likely to become the norm.

Which of the following would be most useful to know in evaluating the argument above?

- A. Whether plant scientists have developed insect-resistant seeds for every crop that is currently grown commercially
- B. Whether farmers typically use agricultural pesticides in larger amounts than is necessary to prevent crop damage.
- C. Whether plants grown from the new genetically engineered seeds can be kept completely free of insect damage.
- D. Whether seeds genetically engineered to produce insect-resistant crops generate significantly lower per acre crop yields than do currently used seeds.
- E. Whether most varieties of crops currently grown commercially have greater natural resistance to insect damage than did similar varieties in the past.

Solution:

Here is the information that is presented. Genetically Engineered Vegetable Seeds (GEVS) -

1. Are resistant to insect damage
2. Cost more but are expected to cost less in the future
3. Will reduce the use of pesticide
4. Will become the norm because customers prefer crops with less pesticide content.

It needs to be evaluated whether the use of these crops is likely to become the norm or not:

A. This choice is irrelevant because the argument specifically mentions that the evaluation needs to be done only to those crops for which the genetically engineered seeds can be developed. So eliminate this answer choice.

B. This answer choice is irrelevant to the argument. So should be eliminated quickly.

C. This answer choice is also irrelevant because it's clearly mentioned in the argument that some amount of pesticide is still required to drive the insects away.

E. Comparison between the present scenario and the earlier one is Out of Scope of the argument. So this too can be eliminated.

Answer choice D is the right answer choice. If the GEVS have lower crop yield then that will be a bottleneck for these crops to be widely produced.

12. Parland's alligator population has been declining in recent years, primarily because of hunting. Alligators prey heavily on a species of freshwater fish that is highly valued as food by Parlanders, who had hoped that the decline in the alligator population would lead to an increase in the numbers of these fish available for human consumption. Yet the population of this fish species has also declined, even though the annual number caught for human consumption has not increased.

Which of the following, if true, most helps to explain the decline in the population of the fish species?

A. The decline in the alligator population has meant that fishers can work in some parts of lakes and rivers that were formerly too dangerous.

B. Over the last few years, Parland's commercial fishing enterprises have increased the number of fishing boats they use.

C. Many Parlanders who hunt alligators do so because of the high market price of alligator skins, not because of the threat alligators pose to the fish population.

D. During Parland's dry season, holes dug by alligators remain filled with water long enough to provide a safe place for the eggs of this fish species to hatch.

E. In several neighbouring countries through which Parland's rivers also flow, alligators are at risk of extinction as a result of extensive hunting.

Solution:

Alligator population has been declining --> Alligators prey fish ---> It was hoped that fish population will increase.

Paradox:

Reduced Alligator population -----> Reduced fish population

Let's look at answer choices:

- A. Irrelevant – It's given in the argument that the human consumption of fish has remained constant. So even though fishers might have access to places in the lake that were initially dangerous, the fishers did not fish more.
- B. Irrelevant – For the same reason as above – the increase in the number of fishing boats does not matter here.
- C. Irrelevant – This does not help in solving the paradox – It does not matter here why alligators were killed – We need to know how killing the alligators resulted in reduced number of fish even though alligators feed on fish.
- E. This is again not relevant for the same reason as answer choice C.
- D. Decrease in Alligator population -> lesser number of safe hatching places for fish eggs -> lesser number of hatched eggs -> lowered fish population. This is the best explanation to this paradox among the 5.

D is therefore the OA.

13. In a certain wildlife park, park rangers are able to track the movements of many rhinoceroses because those animals wear radio collars. When, as often happens, a collar slips off, it is put back on. Putting a collar on a rhinoceros involves immobilizing the animal by shooting it with a tranquilizer dart. Female rhinoceroses that have been frequently re-collared have significantly lower fertility rates than un-collared females. Probably, therefore, some substance in the tranquilizer inhibits fertility.

In evaluating the argument, it would be most useful to determine which of the following?

A. Whether there are more collared female rhinoceroses than un-collared female rhinoceroses in the park.

B. How the tranquilizer that is used for immobilizing rhinoceroses differs, if at all, from tranquilizers used in working with other large mammals

C. How often park rangers need to use tranquilizer darts to immobilize rhinoceroses for reasons other than attaching radio collars

D. Whether male rhinoceroses in the wildlife park lose their collars any more often than the park's female rhinoceroses do

E. Whether radio collars are the only practical means that park rangers have for tracking the movements of rhinoceroses in the park

Solution:

Track movements by Collars--> re-collaring requires immobilizing--> frequently re-collared have low fertility than un-collared

Conclusion: Tranquilizer inhibit fertility

Now we need a piece of information that helps us to evaluate this argument:

A. Irrelevant as it does not answer whether the tranquilizer inhibits fertility.

B. The manner in which the tranquilizer is used or how its use is different than use in working with other mammals is of no relevance here. It doesn't tell us whether substance/ tranquilizer has any effect on fertility.

D. Whether male rhinoceroses in the wild park lose their collar any more often than the park's female rhinoceroses do is irrelevant, since the conclusion only mentions female rhinos.

E. This answer choice is Out of Scope.

C. How often park rangers need to use tranquilizer dart to immobilize rhinoceroses for reasons other than attaching radio collars.

This is a tricky one.

Remember, with the last two lines, the argument equates "been hit with tranquilizers" with "frequently re-collared".

If those two things aren't actually equivalent, then the whole argument is invalid.

So, if we get to know the number of times these rhinos have been immobilized for other reasons than attaching collars, then we can find out whether this link (i.e been with tranquilizers - frequently re-collared) is an accurate link.

14. Industrialists from the country Distopia were accused of promoting the Distopian intervention in the Arcadian civil war merely to ensure that the industrialists' facilities in Arcadia made substantial profits during the war. Yet this cannot be the motive since, as the Distopians foresaw, Distopia's federal expenses for the intervention were eight billion dollars, whereas, during the war, profits from the Distopian industrialists' facilities in Arcadia totaled only four billion dollars.

Which of the following, if true, exposes a serious flaw in the argument made in the second sentence above?

A. During the Arcadian war, many Distopian industrialists with facilities located in Arcadia experienced a significant rise in productivity in their facilities located in Distopia.

B. The largest proportion of Distopia's federal expenses is borne by those who receive no significant industrial profits.

C. Most Distopian industrialists' facilities located in Arcadia are expected to maintain the level of profits they achieved during the war.

D. Distopian industrialists' facilities in Arcadia made substantial profits before the events that triggered the civil war.

E. Many Distopians expressed concern over the suffering that Arcadians underwent during the civil war.

Solution:

The first sentence states that:

Distopian industrialists who wanted to make profits during the Arcadian war through their facilities in Arcadia influenced Distopia to intervene in the civil war.

The second line, in contrast, says –

Federal expense of intervention was 8 billion dollars, whereas the profit made was only 4 billion dollars. Hence the industrialists' motive could not have been money making.

Let's look at the answer choices:

A. Irrelevant – Increase in the productivity at the facility does not matter, since it is already stated that the overall profit was only 4 billion dollars.

C. This answer choice talks about post-war conditions and not about the time when the Arcadian War happened. So this is out of scope and should be eliminated.

D. This answer choice talks about the time before the war happened. So this one again is out of scope and therefore should be eliminated.

E. This answer choice discusses the suffering of Arcadians during the war. This does not help in pointing the flaw anyway.

B. B states that the 8 billion dollars needs to be paid MOSTLY by the residents of Distopia and not industrialists. Whereas the 4 billion dollar profit is shared among the industrialists. Therefore the industrialists did benefit.

Therefore B is the right answer choice.

15. Archaeologists in Michigan have excavated a Native American camp near Dumaw Creek. Radiocarbon dating of animal bones found at the site indicates that the camp dates from some time between 1605 and 1755. However, the camp probably dates to no later than 1630, since no European trade goods were found at the site, and European traders were active in the region from the 1620's onward.

Which of the following, if true, most strengthens the argument?

A. Due to trade among Native Americans, some European trade goods would have reached the area before the European traders themselves did.

B. At all camps in the region that have been reliably dated to the late 1620's, remains of European trade goods have been found.

C. The first European trade goods to reach the area would have been considered especially valuable and preserved as much as possible from loss or destruction.

D. The first European traders in the area followed soon after the first European explorers.

E. The site is that of a temporary camp that would have been used seasonally for a few years and then abandoned. - E not relevant

Solution:

Argument: Europeans were active in the camp region from the 1620s onward. But no traces of their goods were found at the site. Thus, the site cannot be later than 1630.

Assumption:

If European trade goods had ever been present at the site, their remains would have been found.

A - European trade good reaching before the European traders would prepone the date to before 1620. This answer choice seems to *slightly support the conclusion*, though in an indirect fashion.

B - This also seems correct. Let us hold on to this.

C - Read the wording carefully: 'preserved as much as possible from loss or destruction'. This statement carries no guarantee that 'as much as possible' will be successful in preserving those trade goods all the way to the present day, some four hundred years later. Also, *'the first european trade goods to reach the area'* may not have reached this particular camp.

D - The sequence of explorers vs. traders is irrelevant to the question

E - Whether the camp is seasonal or permanent does not matter here. What matters is WHEN it existed. So this too can be eliminated.

The debate is between options A and B.

While choice A indicates that European goods could have reached the site by the 1620s, choice B tells us that in most camps in the region which have been reliably dated, remains of these goods have been found .i.e. it implies that if the goods had been at the Dumaw Creek site, their remains would have been there.

Thus, choice B most strengthens the given argument and is the right answer choice.

16. For years the beautiful Renaissance buildings in Palitito have been damaged by exhaust from the many tour buses that come to the city. There has been little parking space, so most buses have idled at the curb during each stop on their tour, and idling produces as much exhaust as driving. The city has now provided parking that accommodates a third of the tour buses, so damage to Palitito's buildings from the buses' exhaust will diminish significantly.

Which of the following, if true, most strongly supports the argument?

A.The exhaust from Palitito's few automobiles is not a significant threat to Palitito's buildings.

B.Palitito's Renaissance buildings are not threatened by pollution other than engine exhaust.

C.Tour buses typically spend less than one-quarter of the time they are in Palitito transporting passengers from one site to another.

D.More tourists come to Palitito by tour bus than by any other single means of transportation.

E.Some of the tour buses that are unable to find parking drive around Palitito while their passengers are visiting a site.

Solution:

- 1) Buildings get damaged by exhaust from tour buses.
- 2) More buses idle at the curb during each stop.

And idling ---> produces as much exhaust as driving.

A. This answer choice says that exhaust from few automobiles isn't a significant threat. It weakens the argument. If this were to be true then there is no need of parking space.

B. Buildings are threatened by pollution by engine exhaust only – This is irrelevant. The question is talking only about pollution by buses' exhaust anyways, so it does not matter if there are other sources of pollution or not. D. This answer choice talks about the bus in comparison to other means of transportation. That is out of scope.

E. This is a tricky answer choice. The answer choice tries to convey that parking is beneficial as compared to buses driving around the monument. But the argument talks about pollution being caused by idling of buses. This answer does not touch upon that and hence is irrelevant. So this should be eliminated.

C. C says - only $\frac{1}{4}$ of the time is spent in transporting passengers. We can infer that $\frac{3}{4}$ th of the time the buses were idle hence it would make sense to have a parking space.

And therefore this is the right answer choice.

17. Hunter: Hunters alone are blamed for the decline in Green-rock National Forest's deer population over the past ten years. **Yet clearly, black bears have also played an important role in this decline.** In the past ten years, the forest's protected black bear population has risen sharply, and examination of black bears found dead in the forest during the deer hunting season showed that a number of them had recently fed on deer.

In the hunter's argument, the boldface portion plays which of the following roles?

- A. It is the main conclusion of the argument.
- B. It is an objection that has been raised against the main conclusion of the argument.
- C. It is a judgment that the argument opposes.
- D. It is a finding that the argument seeks to explain.
- E. It provides evidence in support of the main conclusion of the argument.

Solution:

Conclusion here is that the black bears are also part of the reason for the decline of deer population.

The latter part of the argument is proof/evidence the author uses to substantiate the conclusion.

Now let's look at the answer choices to eliminate the wrong ones:

A. This answer choice emerges as the right answer. And it's indeed the main conclusion.

B. This is a tricky answer choice because it starts with 'yet' and it objects to the first sentence. However, it is important to keep in mind that the first sentence is not the main conclusion, the second sentence is. Therefore this one can be eliminated.

C. It is a judgement that the argument SUPPORTS but this answer choice says opposes. So this too can be eliminated.

D. The second part of this answer choice is correct but the first part isn't. Nowhere is it mentioned in the argument that the given sentence is a finding or a discovery. Therefore this answer choice can be eliminated.

E. This one is also incorrect. The highlighted sentence is the main conclusion and not the evidence. So this one too can be eliminated.

18. Most of the world's supply of uranium currently comes from the mines. It is possible to extract uranium from seawater, but the cost of doing so is greater than the price that Uranium fetches on the world market. Therefore, until the cost of extracting uranium from seawater can somehow be reduced, this method of obtaining uranium is unlikely to be commercially viable.

Which of the following would it be most useful to determine in evaluating the argument?

- A. Whether the uranium in deposits on land is rapidly being depleted
- B. Whether most uranium is used near where it is mined
- C. Whether there are any technological advances that show promise of reducing the costs of extracting uranium from seawater
- D. Whether the total amount of Uranium in seawater is significantly greater than the total amount of uranium on land
- E. Whether uranium can be extracted from freshwater at a cost similar to the cost of extracting it from seawater.

Solution:

Cost of extracting Uranium:

From Seawater > From Mines

Point to be evaluated:

Whether Extracting Uranium from seawater will be commercially viable ONLY when the cost of such extraction comes down.

Or in other words:

Can it happen that the extraction of Uranium from Seawater becomes viable in spite of the higher cost of extraction?

Let's look at the answer choices:

B. Whether most uranium is used where it is mined does not help in evaluation. It's irrelevant here. So this answer choice can be easily eliminated.

C. This option is basically just reiterating the first part of the argument. It does not add new information.

D. If we answer yes to this question – that is Seawater having more of Uranium than the Uranium on land – It does not affect the evaluation in any way. And even when the answer is no – it does not touch upon a situation where extraction of uranium from seawater can be considered. Therefore this one too can be eliminated.

E. Even if uranium can be extracted from freshwater at a SIMILAR cost to extracting it from seawater..So what? This does not have a bearing on the conclusion of the argument, which is that extraction from seawater will not become commercially viable until the cost of extraction from seawater can be reduced.

Answer choice A emerges as the right answer choice. Let's look at it:

If the Uranium on land is depleting rapidly – then that can result in a situation where extraction from seawater may be considered in spite of high cost of extraction.

Therefore A is the OA.

19. Parasitic wasps lay their eggs directly into the eggs of various host insects in exactly the right numbers for any suitable size of host egg. If they laid too many eggs in a host egg, the developing wasp larvae would compete with each other to the death for nutrients and space. If too few eggs were laid, portions of the host egg would decay, killing the wasp larvae.

Which of the following conclusions can properly be drawn from the information above?

- A. The size of the smallest host egg that a wasp could theoretically parasitize can be determined from the wasp's egg-laying behaviour.
- B. Host insects lack any effective defences against the form of predation practiced by parasitic wasps.
- C. Parasitic wasps learn from experience how many eggs to lay into the eggs of different host species.
- D. Failure to lay enough eggs would lead to the death of the developing wasp larvae more quickly than would laying too many eggs.
- E. Parasitic wasps use visual clues to calculate the size of a host egg.

Solution:

Here is the information we have -

Parasitic Wasps lay eggs in exact numbers into the host egg , neither too few not too many.

Let's look at the answer choices to eliminate the wrong ones:

A. This one emerges out as the right answer. Let's look at it closely:

As it's mentioned that the wasp knows the exact number of eggs that can be injected into the host egg, the wasp would also know a size of host egg into which only one egg can be injected. And that would be the least possible size into which the wasp can inject the egg. So yes therefore the smallest size of the host egg can be determined from the wasp's egg laying behaviour.

Therefore this is the right answer choice.

B. This answer choice is out of scope. The theme of the argument is Parasitic Wasps. Nothing much has been mentioned about the host insects except for the fact that Parasitic Wasps lay eggs into the eggs of host insects. So this answer choice can be quickly eliminated.

C. This is also out of context. We just know that Parasitic Wasps somehow know the exact number of eggs to be laid into the host eggs. How they learned that is not relevant. So this answer choice too can be eliminated.

D. We know that both the situations are bad – Too many eggs being laid or too few. But it's not mentioned which is better or worse than the other. And so this information cannot be inferred based on the information given in the argument.

E. This also cannot be inferred. We just know that the wasps lay exact numbers. But how do they do it is not given. So it cannot be inferred that they use Visual Cues to do so. This one too can be ruled out.

20. Some airlines allegedly reduce fares on certain routes to a level at which they lose money, in order to drive competitors off those routes. However, this method of eliminating competition cannot be profitable in the long run. Once an airline successfully implements this method, any attempt to recoup the earlier losses by charging high fares on that route for an extended period would only provide competitors with a better opportunity to undercut the airline's fares.

Which of the following, if true, most seriously weakens the argument?

- A. In some countries it is not illegal for a company to drive away competitors by selling a product below cost.
- B. Airline executives generally believe that a company that once under-priced its fares to drive away competitors is very likely to do so again if new competitors emerge.
- C. As part of promotions designed to attract new customers, airlines sometimes reduce their ticket prices to below an economically sustainable level.
- D. On deciding to stop serving particular routes, most airlines shift resources to other routes rather than reduce the size of their operations.
- E. When airlines dramatically reduce their fares on a particular route, the total number of air passengers on that route increases greatly.

Solution:

Airlines reduce the fare on some routes ----> To drive the competitors away
Not profitable in the long run----- > Competitors get better opportunity to undercut the fares

The conclusion is that cutting prices is not a feasible long term strategy.

Let's look at the answer choices:

A. This answer choice is out of scope as legalities are not of any concern here.

C. This answer choice repeats what is already given in the passage. Nothing new. So this one also can be eliminated. This is a trap answer.

D. The issue being discussed here is reducing airfares on routes. What happens when a particular route is not served is again out of context here. So this can be eliminated.

E. We don't know the exact volume and therefore the information regarding profit or loss. The general understanding is that when the volume is high then the profit increases. But we don't know what the exact increase in volume was. Therefore this answer choice too can be eliminated.

So B emerges as the right answer choice.

This one hits the bull's eye – If competitors believe that the undercutting company would do so again if competitors come back into the market, they will not attempt to re-enter the market. That means that the original company's strategy will not be affected by this in the long run. This weakens the conclusion and is therefore the right answer.

SOLUTIONS TO READING COMPREHENSION QUESTIONS

(5) o mundo vem sendo
cas antigas aproximadamente
grande de detalhes nas
natureza do cristianismo.
A arqueologia também
contribuindo para o conhecimento
na revolução, mas as evidências
são os cientistas documentam
sua. A arqueologia também
foi separada pelo cristianismo
e a sua importância para a história
e a arqueologia.

Passage 1:

Conventional wisdom has it that large deficits in the United States budget cause interest rates to rise. Two main arguments are given for this claim. According to the first, as the deficit increases, the government will borrow more to make up for the ensuing shortage of funds. Consequently, it is argued, if both the total supply of credit (money available for borrowing) and the amount of credit sought by nongovernment borrowers remain relatively stable, as is often supposed, then the price of credit (the interest rate) will increase. That this is so is suggested by the basic economic principle that if supplies of a commodity (here, credit) remain fixed and demand for that commodity increases, its price will also increase. The second argument supposes that the government will tend to finance its deficits by increasing the money supply with insufficient regard for whether there is enough room for economic growth to enable such an increase to occur without causing inflation. It is then argued that financiers will expect the deficit to cause inflation and will raise interest rates, anticipating that because of inflation the money they lend will be worth less when paid back.

Unfortunately for the first argument, it is unreasonable to assume that nongovernment borrowing and the supply of credit will remain relatively stable. Nongovernment borrowing sometimes decreases. When it does, increased government borrowing will not necessarily push up the total demand for credit. Alternatively, when credit availability increases, for example through greater foreign lending to the United States, then interest rates need not rise, even if both private and government borrowing increase.

The second argument is also problematic. Financing the deficit by increasing the money supply should cause inflation only when there is not enough room for economic growth. Currently, there is no reason to expect deficits to cause inflation. However, since many financiers believe that deficits ordinarily create inflation, then **admittedly** they will be inclined to raise interest rates to offset mistakenly anticipated inflation. This effect, however, is due to ignorance, not to the deficit itself, and could be lessened by educating financiers on this issue.

Map:

First Paragraph: Increase in deficits ---> Increase in Interest Rates (IR)

Two arguments that explain the above:

1. Increased deficit--> Increased Govt. borrowing (and constant credit supply and non-government borrowing demand)--> Increased price of credit
2. Govt. increases the supply of money-> financiers expect inflation ---> increased IR

Second Paragraph:

Explains how the 1st argument is not reasonable.

Third Paragraph:

Explains how the second argument is problematic and how educating the financiers can lessen the effect.

1. Which of the following best summarizes the central idea of the passage?

- A. A decrease in nongovernment borrowing or an increase in the availability of credit can eliminate or lessen the ill effects of increased borrowing by the government.
- B. Educating financiers about the true relationship between large federal deficits and high interest rates will make financiers less prone to raise interest rates in response to deficits.
- C. There is little support for the widely held belief that large federal deficits will create higher interest rates, as the main arguments given to defend this claim are flawed.
- D. When the government borrows money, demand for credit increases, typically creating higher interest rates unless special conditions such as decreased consumer spending arise.
- E. Given that most financiers believe in a cause-and-effect relationship between large deficits and high interest rates, it should be expected that financiers will raise interest rates.

Solution:

Let's look at the answer choices:

- A. This talks about one particular argument and is not something that explains that is central to the whole passage. So this one can be easily eliminated.
- B. This information is central only to the third paragraph and the passage as a whole so this too can be eliminated.
- D. This is central to the second paragraph. So eliminate it right away.
- E. This is again central to the third paragraph. Eliminate.
- C. Emerges as the right answer.

Let's look at it closely:

It sounds perfect. The first paragraph talks about the two widely held beliefs. And the second and third paragraph describe how these beliefs are flawed. This is indeed the right answer.

2. It can be inferred from the passage that proponents of the second argument would most likely agree with which of the following statements?

- A. The United States government does not usually care whether or not inflation increases.
- B. People in the United States government generally know very little about economics.
- C. The United States government is sometimes careless in formulating its economic policies.
- D. The United States government sometimes relies too much on the easy availability of foreign credit.
- E. The United States government increases the money supply whenever there is enough room for growth to support the increase.

Solution:

A - This could be a valid answer option. However, note that "The United states government does not usually care about inflation" is an extreme statement, and not likely to be the right choice on the politically-correct GMAT.

B - This is a gross generalization; also, it is not supported by anything in the text. Hence, this is not the right answer choice.

C - This could be a valid answer choice. This option can be justified with this sentence from the text - "*with insufficient regard for whether there is enough room for economic growth to enable such an increase to occur without causing inflation.*"

D - There is no talk of over-reliance in the argument. Also, 'foreign credit' relates to the first argument, not the second. For these reasons, this is not the right answer choice.

E - However, answer option E states that the government increases the money supply WHEN there is enough room for growth. However, from the text, supporters of the second argument say that the government has insufficient regard for whether there is enough room for economic growth. That is, they say that the government would at times increase the supply EVEN if there is no room for growth. Hence, this option is incorrect.

Between options A and C, option C is a more realistic and less extreme answer, and hence is the OA.

3. Which of the following claims concerning the United States government's financing of the deficit does the author make in discussing the second argument?

- A. The government will decrease the money supply in times when the government does not have a deficit to finance.
- B. The government finances its deficits by increasing the money supply whenever the economy is expanding.
- C. As long as the government finances the deficit by borrowing, nongovernment borrowers will pay higher interest rates.
- D. The only way for the government to finance its deficits is to increase the money supply without regard for whether such an increase would cause inflation.
- E. Inflation should be caused when the government finances the deficit by increasing the money supply only if there is not enough room for economic growth to support the increase.

Solution:

Let's look at the answer choices:

- A. Though the author says that the government increases money supply in times of deficit, nowhere does the author express that the government will *reduce the supply* when there is no deficit.
- B. The key here is 'whenever the economy is expanding'. According to the argument, the government increases its money supply regardless of whether the economy is expanding, and the author does not comment on this portion of the argument.
- C. The second argument does not talk about this at all.
- D. The author does not suggest that increasing money supply is the only way the government can finance its deficits.
- E. This is the correct answer. The Author *does say* that inflation occurs when there is increased money supply and not enough room for growth.

4. The author uses the term "admittedly" (see highlighted text) in order to indicate that

- A. the second argument has some truth to it, though not for the reasons usually supposed
- B. the author has not been successful in attempting to point out inadequacies in the two arguments
- C. the thesis that large deficits directly cause interest rates to rise has strong support after all
- D. financiers should admit that they were wrong in thinking that large deficits will cause higher inflation rates
- E. financiers generally do not think that the author's criticisms of the second argument are worthy of consideration

Solution:

This question requires us to dig little deeper into the third paragraph.

We understand that if the economy is not doing well then more money can result in inflation. However, because financiers (mistakenly) believe that deficits will definitely cause inflation, they increase interest rates. Therefore argument 2 is not completely wrong - this is what the word 'admittedly' is referring to. Let's look at the answer choices:

- A. This appears correct. Let us hold on to it.
- B. This is not true. The author has pointed out valid inadequacies in both arguments.
- C. 'Strong support' is too extreme. The author is only conceding that, under some circumstances, because of the ignorance of financiers, interest rates could rise.
- D. This is not indicated anywhere in these lines.
- E. Again, this is completely irrelevant.

This leaves us with A as the right answer choice.

Passage 2:

Recent feminist scholarship concerning the United States in the 1920's challenges earlier interpretations that assessed the twenties in terms of the unkept "promises" of the women's suffrage movement. **(Lines 6-7)** This new scholarship disputes the long-held view that because a women's voting bloc did not materialize after women gained the right to vote in 1920, suffrage failed to produce long-term political gains for women. These feminist scholars also challenge the old view that pronounced suffrage a failure for not delivering on the promise that the women's vote would bring about moral, corruption free governance. Asked whether women's suffrage was a failure, these scholars cite the words of turn-of-the- century social reformer Jane Addams, "Why don't you ask if suffrage in general is failing?"

In some ways, however, these scholars still present the 1920's as a period of decline. After suffrage, they argue, the feminist movement lost its cohesiveness, and gender consciousness waned. After the mid-1920's, few successes could be claimed by feminist reformers: little could be seen in the way of legislative victories. During this decade, however, there was intense activism aimed at achieving increased autonomy for women, broadening the spheres within which they lived their daily lives. Women's organizations worked to establish opportunities for women: they strove to secure for women the full entitlements of citizenship, including the right to hold office and the right to serve on juries.

Map:

Let's look at the passage:

First Paragraph:

New Scholarship challenged two ideas of the WSM in 1920s:

1. WSM failed to produce political gains for women
2. WSM failed to bring about corruption free governance

Second Paragraph:

Scholar's perspective:

However, the scholars still present the 1920's as a period of decline for the feminist movement.

Author's Perspective:

In reality, during the 1920s, activism helped women's rights in many ways

5. The passage is primarily concerned with

- A. providing evidence indicating that feminist reformers of the 1920's failed to reach some of their goals
- B. presenting scholarship that contrasts suffragist "promises" with the historical realities of the 1920's
- C. discussing recent scholarship concerning the achievements of women's suffrage during the 1920's and presenting an alternative view of those achievements
- D. outlining recent findings concerning events leading to suffrage for women in the 1920's and presenting a challenge to those findings
- E. providing support for a traditional view of the success of feminist attempts to increase gender consciousness among women during the 1920's

Solution:

Let's look at the answer choices:

- A. There is no mention of any goals that WSM is/was planning to meet.
- B. Some historical realities are mentioned in the second paragraph but the contrast between realities and promises is not the overarching concern of the passage.
- C. This seems correct, let us hold on to this.
- D. Totally out of context based on the pointers given above.
- E. Totally out of context based on the pointers given above.

C emerges as the right answer choice. The word achievement is not mentioned explicitly in the passage, but first paragraph discusses the two things that WSM failed to achieve.

6. It can be inferred that the author of the passage disagrees with the "new scholarship" mentioned in lines 6-7 regarding the

- A. degree to which the "promises" of the suffrage movement remained unkept
- B. degree to which suffrage for women improved the morality of governance
- C. degree to which the 1920's represented a period of decline for the feminist movement
- D. degree of legislative success achieved by feminist reformers during the 1920's
- E. accuracy of the view that a women's voting bloc did not materialize once suffrage was achieved .

Solution:

- A. Looking at the map, the author's disagreement is in the last paragraph, and it primarily contests the 'new scholarship' opinion that the feminist movement lost steam after the 1920s. Therefore A is wrong.
- B. Again, the disagreement is about the status of the feminist movement, not about suffrage. This is wrong.
- C. C is the right answer, and it describes the disagreement accurately.
- D. This is wrong, because the author does not disagree with the researchers about how many legislative victories were attained.
- E. Again, author does not dispute the accuracy of the voting-bloc opinion.

7. The purpose of the second paragraph (lines 23-31) of the passage is to

- A. suggest a reason why suffragist "promises" were not kept
- B. contrast suffragist "promises" with the reality of the 1920's
- C. deplore the lack of successful feminist reform in 1920's
- D. explain a view held by feminist scholars
- E. answer the question asked by Jane Addams

Solution:

This question is quite straightforward.

- A. The second paragraph talks about the view held by researchers that the 1920s were a period of decline. It does not talk about why suffragist promises were not kept.
- B. Again, the second paragraph is not about suffragist promises.
- C. 'Deplore' is too extreme a word.. But let us hold on to this.
- D. This seems accurate, let us hold on to this.
- E. Irrelevant

Between C and D, D presents the more accurate answer. C is too opinionated. D is therefore the OA.

Passage 3:

In a 1984 book, Claire C. Robertson argued that, before colonialism, age was a more important indicator of status and authority than gender in Ghana and in Africa generally. British colonialism imposed European-style male-dominant notions upon more egalitarian local situations to the detriment of women generally, and gender became a defining characteristic that weakened women's power and authority.

(Line 18) Subsequent research in Kenya convinced Robertson that she had overgeneralized about Africa. Before colonialism, gender was more salient in central Kenya than **(Line 24)** it was in Ghana, although age was still crucial in determining authority. In contrast with Ghana, where women had traded for hundreds of years and achieved legal majority (not unrelated phenomena), the evidence regarding central Kenya indicated that women were legal minors and were sometimes treated as male property, as were European women at that time.

Factors like strong patrilinearity and patrilocality, as well as women's inferior land rights and lesser involvement in trade, made women more dependent on men than was generally the case in Ghana. However, since age apparently remained the overriding principle of social organization in central Kenya, some senior women had much authority.

Thus, Robertson revised her hypothesis somewhat, arguing that in determining authority in precolonial Africa age was a primary principle that superseded gender to varying degrees depending on the situation.

Map:

First Paragraph:

In Africa:

Before colonialism age was indicator of status and authority -> Post Colonialism the European Male Dominant system became the norm.

Second paragraph:

The author realises that she over generalised and that situations were different in different parts of Africa - Even before colonialism, Kenya had a more male-dominant system than Ghana, though age was still the overriding factor.

8. The primary purpose of the passage is to

- A. present evidence undermining a certain hypothesis
- B. describe a particular position and its subsequent modification
- C. discuss two contrasting viewpoints regarding a particular issue
- D. describe how a social phenomenon varied by region
- E. evaluate an assumption widely held by scholars

Solution:

Let's look at the answer choices:

- A. No evidence has been undermined in the passage. So this one can be eliminated.
- C. This one is true of the second paragraph in particular and therefore cannot be the primary purpose of the passage as a whole and therefore should be eliminated.
- D. Passage not only discusses variation but also similarities. So this can be eliminated.
- E. This passage is about one person's view - 'widely held by scholars' makes this answer choice the wrong one.
- B. B emerges as the right answer. In the first paragraph the author gives a generalised viewpoint and in the second one she makes modifications as she realises that the generalisations she made were not completely true.

9. The passage indicates that Robertson's research in Kenya caused her to change her mind regarding which of the following?

- A. Whether age was the prevailing principle of social organization in Kenya before colonialism
- B. Whether gender was the primary determinant of social authority in Africa generally before colonialism
- C. Whether it was only after colonialism that gender became a significant determinant of authority in Kenyan society
- D. Whether age was a crucial factor determining authority in Africa after colonialism
- E. Whether British colonialism imposed European-style male-dominant notions upon local situations in Ghana

Solution:

- A. From the second paragraph, it is clear that Robertson did not change her mind about age being a principle; she just modified her opinion on how important gender was as a factor.
 - B. The words 'primary determinant' are key here. She does not refer to gender as the primary determinant before colonialism, either at first, or after she changed her mind.
 - C. This is the right answer. She does accept that she over-generalized and that gender was a significant determinant of authority in Kenya even before colonialism.
 - D. She does not refer to age as a crucial factor after colonialism.
 - E. Her stand on the influence of British colonialism does not change throughout the passage, so this is wrong too.
- Option C is the right answer

10. The passage suggests that after conducting the research mentioned in line 18, but not before, Robertson would have agreed with which of the following about women's status and authority in Ghana?

- A. Greater land rights and greater involvement in trade made women in precolonial Ghana less dependent on men than were European women at that time.
- B. Colonialism had a greater impact on the status and authority of Ghanaian women than on Kenyan women.
- C. Colonialism had less of an impact on the status and authority of Ghanaian women than it had on the status and authority of other African women.
- D. The relative independence of Ghanaian women prior to colonialism was unique in Africa.
- E. Before colonialism, the status and authority of Ghanaian women was similar to that of Kenyan women.

Solution:

Let's look at the answer choices:

- A. This answer choice compares women in Ghana to European women. And that has not been discussed in the passage. Can be easily eliminated.
- C. The pre-colonial women in Ghana had traded for hundreds of years and had achieved legal majority. But they faced immense change after colonialism. In Kenya gender was a consideration even before Colonialism. So Ghana saw much drastic change. Therefore this answer choice can be eliminated.
- D. This is out of scope as nothing has been mentioned regarding this in the passage.
- E. The opposite is true so this one can be easily eliminated.
- B. B is the right answer. It is true that colonialism had a greater impact on Ghana (which was a more egalitarian society before colonialism) than it did on Kenya (which was a more male-dominant society even before colonialism).

11. The author of the passage mentions the status of age as a principle of social organization in precolonial central Kenya in lines 24-26 most likely in order to

- A. indicate that women's dependence on men in precolonial Kenya was not absolute
- B. contrast the situation of senior women to that of less senior women in precolonial Kenyan society
- C. differentiate between the status and authority of precolonial Kenyan women and that of precolonial Ghanaian women
- D. explain why age superseded gender to a greater extent in precolonial Kenya than it did elsewhere in Africa
- E. identify a factor that led Robertson to revise her hypothesis about precolonial Africa

Solution:

Let's look at the answer choices:

- A. This is not correct. These lines do not indicate anything about the extent of dependence.
- B. There is no comparison between senior and junior women in these lines.
- C. This may be correct.
- D. There is no explanation for why age superseded gender, either in these lines, or anywhere else in the passage.
- E. This is accurate. The fact that gender was a salient factor in Kenya led the researcher to revise her hypothesis.

Between C and E, E is the better answer. These lines do differentiate between precolonial Kenyan and Ghanaian women (answer option C), but more importantly, the information led the researcher to revise her hypothesis (answer option E).

Passage 4:

The professionalization of the study of history in the second half of the nineteenth century, including history's transformation from a literary genre to a scientific discipline, had important consequences not only for historians' perceptions of women but also for women as historians. The disappearance of women as objects of historical studies during this period has elements of irony to it. On the one hand, in writing about women, earlier historians had relied not on firsthand sources but rather on secondary sources; the shift to more rigorous research methods required that secondary sources be disregarded. On the other hand, the development of archival research and the critical editing of collections of documents began to reveal significant new historical evidence concerning women, yet this evidence was perceived as substantially irrelevant: historians saw political history as the general framework for historical writing. Because women were seen as belonging to the private rather than to the public sphere, the discovery of documents about them, or by them, did not, by itself, produce history acknowledging the contributions of women. In addition, genres such as biography and memoir, those forms of "particular history" that women had traditionally authored, fell into disrepute. The dividing line between "particular history" and general history was redefined in stronger terms, widening the gulf between amateur and professional practices of historical research.

Map:

Professionalization of study of history "1850-1900" led to following changes:

History: Literary--> Scientific

Disappearance of women as objects of historical studies:

Elements of irony:

On one hand –historians now relied on primary sources and more rigorous and scientific research, secondary sources were disregarded.

On the other hand - This new scientific research of archives and documents revealed new historical evidence concerning women, but this was perceived as irrelevant because it belonged in the private sphere, not the public sphere.

The gap between professional and amateur practices of research widened.

12. The passage is primarily concerned with

- A. describing some effects of the professionalization of the study of history on the writing of women's history
- B. explaining some reasons for the professionalization of the writing of history
- C. discussing the kinds of historical writing traditionally practiced by women
- D. contrasting the approach to the writing of history taken by women with the approach taken by men
- E. criticizing certain changes that occurred in the writing of history during the second half of the nineteenth century

Solution:

The POE for the question is as follows.

B. Can be easily eliminated as the passage does not talk about “reasons for the professionalization” anywhere.

C. Can be easily eliminated - the passage does not discuss kinds of historical writing practiced by women.

D. There are no contrasting approaches taken by men and women described in the passage. This one too can be eliminated.

E. The tone of the author in the passage is quite neutral. This too can be eliminated.

We are left with A, which is the right answer choice.

13. Which of the following best describes one of the "elements of irony" referred to in the highlighted text?

A. Although the more scientific-minded historians of the second half of the nineteenth century considered women appropriate subjects for historical writing, earlier historians did not.

B. Although archival research uncovered documentary evidence of women's role in history, historians continued to rely on secondary sources for information about women.

C. Although historians were primarily concerned with writing about the public sphere, they generally relegated women to the private sphere.

D. The scientific approach to history revealed more information about women, but that information was ignored.

E. The professionalization of history, while marginalizing much of women's writing about history, enhanced the importance of women as historical subjects.

Solution:

The POE for this question is as follows -

A - This is not true. It is clear from the passage that earlier historians also wrote about women, though they used secondary sources.

B - This is also not true. From the passage, historians began to disregard secondary sources - they did not continue to use them.

C - From the passage, it is true that historians were interested in writing about the public sphere and that women were relegated to the private sphere. Hold on to this answer.

D - This is very true from the passage. If you look at our mind-map too, the element of irony is that, with the new methods of research, a lot of new information was found about women in history - but since women were seen as belonging to the private sphere, and since history was supposed to be about the public sphere, this information was ignored.

E - This is not true according to the passage. The professionalisation of history marginalised the contributions of women, it did not give them greater importance.

Between choices C and D, D expresses the 'element of irony' - which is - even though important information was found, it was not used. C does not reflect the irony.

Hence D is the OA.

14. According to the passage, the development of archival research and the critical editing of collections of documents had which of the following effects?

- A. Historians increasingly acknowledged women's contributions to history.
- B. Historians began to debate whether secondary sources could provide reliable information.
- C. Historians began to apply less rigorous scientific research criteria to the study of women's history.
- D. More evidence concerning women became available to historical researchers.
- E. Women began to study history as professional historians.

Solution:

Look at the following line from the passage:

The POE for this question is as follows -

- A - This is not indicated anywhere in the passage.
- B - This is also not true. There was no debate - historians began to discard secondary resources.
- C - This is not indicated anywhere in the passage. In fact, historians began to apply MORE rigorous scientific research criteria, not less.
- D - This is true, from the passage - "On the other hand, the development of archival research and the critical editing of collections of documents began to reveal significant new historical evidence concerning women".
- E - The passage does not indicate that women began to study history professionally as a result of these developments.

Therefore D is the OA.

Passage 5 :

Prior to 1965 geologists assumed that the two giant rock plates meeting at the San Andreas Fault generate heat through friction as they grind past each other, but in 1965 Henyey found that temperatures in drill holes near the fault were not as elevated as had been expected. Some geologists wondered whether the absence of friction-generated heat could be explained by the kinds of rock composing the fault. Geologists' pre-1965 assumptions concerning heat generated in the fault were based on calculations about common varieties of rocks, such as limestone and granite; but "weaker" materials, such as clays, had already been identified in samples retrieved from the fault zone. Under normal conditions, rocks composed of clay produce far less friction than do other rock types. In 1992 Byerlee tested whether these materials would produce friction 10 to 15 kilometres below the Earth's surface. Byerlee found that when clay samples were subjected to the thousands of atmospheres of pressure they would encounter deep inside the Earth, they produced as much friction as was produced by other rock types. The harder rocks push against each other, the hotter they become; in other words, pressure itself, not only the rocks' properties, affects frictional heating. Geologists therefore wondered whether the friction between the plates was being reduced by pockets of pressurized water within the fault that push the plates away from each other.

Map:

Prior 1965: Geologists ---> the SAF rock plates generate heat

1965: Henyey --> temp not as high as expected

Reason: Could be clay based rocks

1992: Byerlee --> Clay rocks generate same amount of friction under high pressure

Geologists -> wondered if the reason for low temperature was pockets of water that reduce friction.

15. The passage suggests which of the following regarding Henyey's findings about temperature in the San Andreas Fault?

- A. Scientists have yet to formulate a definitive explanation for Henyey's findings.
- B. Recent research suggests that Henyey's explanation for the findings should be modified.
- C. Henyey's findings had to be recalculated in light of Byerlee's 1992 experiment.
- D. Henyey's findings provided support for an assumption long held by geologists.
- E. Scientists have been unable to duplicate Henyey's findings using more recent experimental methods.

Solution:

The POE for the options is as follows.

- A. The last sentence – ‘geologists wondered’, suggests that there is no definitive explanation yet. This looks like the correct answer option.
- B. Henyey did not explain his findings, other geologists suggested an explanation. Hence this can be eliminated.
- C. This is not mentioned in the passage. There are only assumptions and nothing definitive to recalculate.
- D. The Henyey's study is not in the support of the assumption. Eliminate this option.
- E. Nothing about more recent experiments is mentioned, two experiments, one in 1922 and the other in 1965. Eliminate.

Therefore, A is the OA.

16. The passage is primarily concerned with

- A. evaluating a method used to test a particular scientific hypothesis
- B. discussing explanations for an unexpected scientific finding
- C. examining the assumptions underlying a particular experiment
- D. questioning the validity of a scientific finding
- E. presenting evidence to support a recent scientific hypothesis ~

Solution:

The POE for the options is as follows.

A. There is no hypothesis given in the passage that is being evaluated.

Eliminate this answer choice.

B. Keep this one – Nothing is wrong about this answer choice.

C. Few experiments are mentioned but there is no one particular experiment that is being examined. Eliminate this one.

D. Nothing is being questioned in the passage as well. Eliminate this one too.

E. Can be eliminated for the same reason as A

Let's look at B again. There is an unexpected finding – that the temperature of the rocks was lower than expected. And the passage is trying to discuss the explanation for it.

Therefore B is the right answer choice.

17. The passage mostly agree that Henyey's findings about temperature in the San Andreas Fault made the greatest contribution in that they

A. revealed an error in previous measurements of temperature in the San Andreas Fault zone

B. indicated the types of clay present in the rocks that form the San Andreas Fault

C. established the superiority of a particular technique for evaluating data concerning friction in the San Andreas Fault

D. suggested that geologists had inaccurately assumed that giant rock plates that meet at the San Andreas Fault generate heat through friction

E. confirmed geologists' assumptions about the amount of friction generated by common varieties of rocks, such as limestone and granite .

Solution:

The POE is as follows.

A. Prior to Henyey's experiment there was no experiment conducted according to the passage. There was only an assumption that was made and that was proved inaccurate. So this answer choice can be eliminated.

B. Types of rocks are not mentioned in the passage. Therefore this answer choice can be eliminated.

C. Not correct according to the passage. Can be eliminated.

E. Henyey's experiment proved that temperature is much lower than expected – this could be due to the presence of Clay rocks that produce less friction in comparison to the rocks such as limestone, granite. How much friction limestone and granite generate is not important to the passage. Hence eliminate.

D. Is the only answer choice that remains and the first few lines in the passage are in line with the information given in this answer choice.

Therefore this is the right answer choice.

Passage 6 :

The human species came into being at the time of the greatest biological diversity in the history of the Earth. Today, as human populations expand and alter the natural environment, they are reducing biological diversity to its lowest level since the end of the Mesozoic era, 65 million years ago. The ultimate consequences of this biological collision are beyond calculation, but they are certain to be harmful. That, in essence, is the biodiversity crisis.

The history of global diversity can be summarized as follows: after the initial flowering of multicellular animals, there was a swift rise in the number of species in early Paleozoic times (between 600 and 430 million years ago), then plateau like stagnation for the remaining 200 million years of the Paleozoic era, and finally a slow but steady climb through the Mesozoic and Cenozoic eras to diversity's all-time high. This history suggests that biological diversity was hard won and a long time in coming. Furthermore, this pattern of increase was set back by five massive extinction episodes. The most recent of these, during the Cretaceous period, is by far the most famous, because it ended the age of the dinosaurs, conferred hegemony on the mammals, and ultimately made possible the ascendancy of the human species. But the Cretaceous crisis was minor compared with the Permian extinctions 240 million years ago, during which between 77 and 96 percent of marine animal species perished. It took 5 million years, well into Mesozoic times, for species diversity to begin a significant recovery.

Within the past 10,000 years biological diversity has entered a wholly new era. Human activity has had a devastating effect on species diversity, and the rate of human-induced extinctions is accelerating. Half of the bird species of Polynesia have been eliminated through hunting and the destruction of native forests. Hundreds of fish species endemic to Lake Victoria are now threatened with extinction following the careless introduction of one species of fish, the Nile perch. The list of such biogeographic disasters is extensive.

Because every species is unique and irreplaceable, the loss of biodiversity is the most profound process of environmental change. Its consequences are also the least predictable because the value of Earth's biota (the fauna and flora collectively) remains largely unstudied and unappreciated; unlike material and cultural wealth, which we understand because they are the substance of our everyday lives, biological wealth is usually taken for granted. This is a serious strategic error, one that will be increasingly regretted as time passes. The biota is not only part of a country's heritage, the product of millions of years of evolution centered on that place; it is also a potential source for immense untapped material wealth in the form of food, medicine, and other commercially important substance.

Map:

1st Paragraph:

As human population is expanding --> Biodiversity is reducing

2nd Paragraph:

History of earth's biodiversity

3rd Paragraph:

How human impact has drastically impacted the biodiversity

4th Paragraph:

Loss of biodiversity and the impact it can have in times to come.

18. Which one of the following best expresses the main idea of the passage?

- A. The reduction in biodiversity is an irreversible process that represents a setback both for science and for society as a whole.
- B. The material and cultural wealth of a nation are insignificant when compared with the country's biological wealth.
- C. The enormous diversity of life on Earth could not have come about without periodic extinctions that have conferred pre-eminence on one species at the expense of another.
- D. The human species is in the process of initiating a massive extinction episode that may make past episodes look minor by comparison.
- E. The current decline in species diversity is human-induced tragedy of incalculable proportions that has potentially grave consequences for the human species.

Solution:

The POE is as follows.

- A. loss of biodiversity is not mentioned as setback to science anywhere in the passage. So this answer choice can be eliminated.
- B. This information is given in the last paragraph but it cannot be the central idea of the passage as whole. Eliminate.
- C. This information is totally irrelevant and is not given anywhere in the passage. Can be eliminated.
- D. This is an extreme answer choice. And this information also is not given in the passage. It can be eliminated.
- E. The passage as a whole talks about the loss of biodiversity as a result of interference by humans, and its impact in times to come. This answer choice talks exactly about that and is therefore the right answer choice.

19. The author mentions the Nile perch in order to provide an example of

- A. a species that has become extinct through human activity
- B. the typical lack of foresight that has led to biogeographic disaster
- C. a marine animal species that survived the Permian extinctions
- D. a species that is a potential source of material wealth
- E. the kind of action that is necessary to reverse the decline in species diversity

Solution:

It's given in the passage:

"Hundreds of fish species endemic to Lake Victoria are now threatened with extinction following the careless introduction of one species of fish, the Nile perch."

A. Looking at the above information we know the Nile Perch fish is not the one that became extinct. Eliminate.

B. Sounds right. Keep it.

C. This species, when introduced, resulted in the extinction of other fish species. Its survival was never a problem according to the passage. Therefore this one too can be eliminated.

D. The Nile Perch is not mentioned as a source of wealth in the passage. Eliminate.

E. The introduction of Nile perch is not a corrective action that can reverse the decline, it is a careless action that has led to disaster. Eliminate

We are left with B and that is the correct answer. The careless introduction of the Nile Perch led to extinction of other species which was a biogeographic disaster.

20. All of the following are explicitly mentioned in the passage as contributing to the extinction of species EXCEPT

- A. hunting
- B. pollution
- C. deforestation
- D. the growth of human populations
- E. human-engineered changes in the environment

Solution:

A. in the 3rd paragraph hunting has been discussed. Hence eliminate.

B. The passage does not talk about pollution anywhere. Therefore B is the right answer.

C. Deforestation is mentioned as a reason in the 3rd paragraph. Eliminate.

D. In the first paragraph expansion of human population has been mentioned as reason for reduced bio-diversity. Hence eliminate.

E. In the 3rd paragraph human engineered changes (the Nile Perch) has been discussed. Hence eliminate.

Therefore, B is the OA.



SOLUTIONS TO PROBLEM-SOLVING QUESTIONS

1. 70, 75, 80, 85, 90, 105, 105, 130, 130, 130

The list shown consist of the times, in seconds, that it took each of 10 school children to run a distance of 400 meter. If the SD of ten running times is 22.4 seconds, rounded to nearest tenth of second, how many of the 10 running times is more than one SD below the mean of the 10 running times?

- A. One
- B. Two
- C. Three
- D. Four
- E. Five

Solution:

"How many of the 10 running times are more than one SD below the mean"

The question is asking how many data points from the given 10 data points are less than mean-1SD.

We are given that $SD=22.4$, so we should find the mean.

We find that the mean is 100. There are only 2 data points below $100-22.4=77.6$, namely 70 and 75.

Answer: B

Key Point: Standard deviation is the average of the deviations from the mean. Basically, it is an indication of how spread the data is from the mean.

2. At a certain supplier, a machine of type A costs \$20,000 and a machine of type B costs \$50,000. Each machine can be purchased by making a 20 percent down payment and repaying the remainder of the cost and the finance charges over a period of time. If the finance charges= 40 percent of the remainder of the cost, how much less would 2 machines of type A cost than 1 machine of type B?

- A. \$10,000
- B. \$11,200
- C. \$12,000
- D. \$12,800
- E. \$13,200

Solution:

1 machine of type B will cost:

(20% down payment of 50,000 = 10,000) plus (remaining sum, which is 50,000-10,000=40,000) plus (40% of finance charges, which is $40,000 \times 0.4 = 16,000$).

Therefore, the total sum is $10,000 + 40,000 + 16,000 = 66,000$.

2 machines of type A will cost:

(2* 20% down payment of 20,000 = $2 \times 4,000 = 8,000$) plus remaining sum (40,000-8,000=32,000) plus (40% of finance charges $32,000 \times 0.4 = 12,800$)

Therefore, the total sum is $8,000 + 32,000 + 12,800 = 52,800$;

Difference = $66,000 - 52,800 = 13,200$.

Answer: E

3. For a certain race, 3 teams were allowed to enter 3 members each. A team earned $6 - n$ points whenever one of its members finished in n th place, where $1 \leq n \leq 5$. There were no ties, disqualifications, or withdrawals. If no team earned more than 6 points, what is the least possible score a team could have earned?

- A. 0
- B. 1
- C. 2
- D. 3
- E. 4

Solution:

Total scores:

$$6-1 = 5$$

$$6-2 = 4$$

$$6-3 = 3$$

$$6-4 = 2$$

$$6-5 = 1$$

$$\text{Total} = 15$$

Now, no team can get more than 6 points, and we need to find the least possible points that a team can have. Thus, let's give maximum points to two teams so that the remaining one team will have least points.

Max points per team = 6

For 2 teams, maximum total points = $2 \times 6 = 12$.

Points remaining for team 3 = $15 - 12 = 3$.

Answer: D

Key Point : To minimize one object, maximize the remaining objects.

4. On his drive to work, Leo listens to one of three radio stations A, B or C. He first turns to A. If A is playing a song he likes, he listens to it; if not, he turns it to B. If B is playing a song he likes, he listens to it; if not, he turns it to C. If C is playing a song he likes, he listens to it; if not, he turns off the radio. For each station, the probability is 0.30 that at any given moment the station is playing a song Leo likes. On his drive to work, what is the probability that Leo will hear a song he likes?

A. 0.027

B. 0.090

C. 0.417

D. 0.657

E. 0.900

Solution:

The desired probability is the sum of the following events:

A is playing the song he likes - 0.3;

A is not, but B is - $0.7 \times 0.3 = 0.21$;

A is not, B is not, but C is - $0.7 \times 0.7 \times 0.3 = 0.147$;

$$P = 0.3 + 0.21 + 0.147 = 0.657.$$

An alternate way to solve the problem is -

The desired probability = 1 - the probability that neither of the stations is playing the song he likes: $P = 1 - 0.7 \times 0.7 \times 0.7 = 0.657$.

Answer: D

Key Point: Here, the key is finding all the possible scenarios. This question has three scenarios.

5. Of the 800 employees of Company X, 70 percent have been with the company for at least ten years. If y of these "long-term" members were to retire and no other employee changes were to occur, what value of y would reduce the percent of "long-term" employees in the company to 60 percent?

- A. 200
- B. 160
- C. 112
- D. 80
- E. 56

Solution:

The number of "long-term" employees is $70\% \times 800 = 560$.

After y of them retire new # of "long-term" employees would become $560 - y$.

Total # of employees would become $800 - y$.

We want $560 - y$ to be 60% of $800 - y$ --> $560 - y = (800 - y) \times 60\%$ --> $y = 200$.

Answer: A

Key Point: What could trip up students here is that they may not reduce the denominator to $(800 - y)$. Remember, when dealing with percentages, we always need to be wary about what the total quantity is - i.e, the denominator.

6. A certain business produced x rakes each month from November through February and shipped $x/2$ rakes at the beginning of each month from March through October. The business paid no storage costs for the rakes from November through February, but it paid storage costs of \$0.10 per rake each month from March through October for the rakes that had not been shipped. In terms of x , what was the total storage cost, in dollars, that the business paid for the rakes for the 12 months from November through October?

- A. $0.40x$
- B. $1.20x$
- C. $1.40x$
- D. $1.60x$
- E. $3.20x$

Solution:

Pick some smart number for x , let $x=2$ (We are choosing $x=2$ as in this case monthly shipments would be $x/2=1$).

From November to February, $4x=8$ rakes were produced.

In March, business paid for storage of $8-1=7$ rakes, in the next month for storage of 6 and so on.

So total storage cost would be: $0.1(7+6+5+4+3+2+1)=2.8$

As $x=2$, then $2.8=1.4x$.

Answer: C

Key point: In this example, plugging in will make the solution easy to arrive at.

7. A boat traveled upstream 90 miles at an average speed of $(v-3)$ miles per hour and then traveled the same distance downstream at an average speed of $(v+3)$ miles per hour. If the trip upstream took a half hour longer than the trip downstream, then how many hours did it take the boat to travel downstream?

- A. 2.5
- B. 2.4
- C. 2.3
- D. 2.2
- E. 2.1

Solution:

Trip upstream took $90/(v-3)$ hours and trip downstream took $90/(v+3)$ hours.

Also, given that the difference in times was 12 hours -->

$$90/(v-3) - 90/(v+3) = 12;$$

$$90/(v-3) - 90/(v+3) = 1/2$$

$$\rightarrow (90(v+3) - 90(v-3)) / (v^2 - 9) = 1/2$$

$$\rightarrow 90 \cdot 6 / (v^2 - 9) = 1/2$$

$$\rightarrow v^2 = 90 \cdot 6 \cdot 2 + 9$$

$$\rightarrow v^2 = 9 \cdot (10 \cdot 6 \cdot 2 + 1) \rightarrow v^2 = 9 \cdot 121 \rightarrow v = 3 \cdot 11 = 33;$$

Trip downstream took $90/(v+3) = 90/(33+3) = 2.5$ hours.

Answer: A

Key point: Here the key-point is forming the equations and knowing about Upstream and Downstream.

8. A certain library assesses fines for overdue books as follows. On the first day that a book is overdue, the total fine is \$0.10. For each additional day that the book is overdue, the total fine is either increased by \$0.30 or doubled, whichever results in the lesser amount. What is the total fine for a book on the fourth day it is overdue?

- A. \$0.60
- B. \$0.70
- C. \$0.80
- D. \$0.90
- E. \$1.00

Solution:

Notice that the fines are already cumulative: "For each additional day that the book is overdue, the total fine is ..."

1st day fine - 0.1

2nd day fine - $0.1 * 2 = 0.2$ (as doubling gives the lower value)

3rd day fine - $0.2 * 2 = 0.4$ (as doubling gives the lower value)

4th day fine - $0.4 + 0.3 = 0.7$ (as doubling gives the higher value, we add 0.3 this time)

Answer: B

9. The rate of a certain chemical reaction is directly proportional to the square of the concentration of chemical A present and inversely proportional to the concentration of chemical B present. If the concentration of chemical B is increased by 100%, which of the following is closest to the percent change in the concentration of chemical A required to keep the reaction rate unchanged?

- A. 100% decrease
- B. 50% decrease
- C. 40% decrease
- D. 40% increase
- E. 50% increase

Solution:

A direct relationship between y and x can be written $y = kx$. An inverse relationship between y and x can be written $y = k/x$.

So in this problem, $r = kA^2 / B$

Now in our new situation, let's call the new concentration of A as A', and the new concentration of B as B'. In our new situation the rate is the same, so

New rate = Old rate

$$k (A')^2 / B' = k A^2 / B$$

We know that if B is increased by 100%, that means B is doubled, so $B' = 2B$.

$$k (A')^2 / 2B = k A^2 / B$$

We can multiply both sides by B/k, so

$$(A')^2 = 2 A^2$$

This means that $A' = A \sqrt{2}$. You should have memorized that:

$$\sqrt{2} = 1.4$$

$$\sqrt{3} = 1.7$$

so $A' = 1.4 A$, or a 40% increase.

Key Point: It is important to keep in mind the rules of direct and inverse proportion.

10. A thin piece of wire 40 meters long is cut into two pieces. One piece is used to form a circle with radius r , and the other is used to form a square. No wire is left over. Which of the following represents the total area, in square meters, of the circular and square regions in terms of r ?

A. πr^2

B. $\pi r^2 + 10$

C. $\pi r^2 + 1/(4 \pi^2 r^2)$

D. $\pi r^2 + (40 - 2 \pi r)^2$

E. $\pi r^2 + (10 - 1/(2 \pi r))^2$

Solution:

The area of a circle is πr^2 and $2\pi r$ meters of wire will be used;

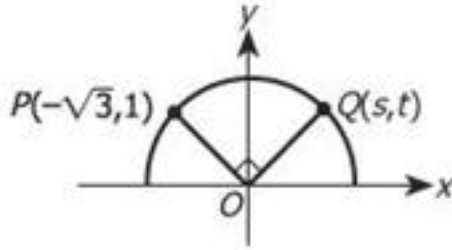
There will be $40 - 2\pi r$ meters of wire left for a square. Each side of this square will be $(40 - 2\pi r)/4 = 10 - (\pi r/2)$, hence the area of the square will be $(10 - (\pi r/2))^2$.

The total area will be $\pi r^2 + (10 - (\pi r/2))^2$.

Answer: E

11. In the figure below, points P and Q lie on the circle with center O.
What is the value of s?

- A. $1/2$
- B. 1
- C. $\sqrt{2}$
- D. $\sqrt{3}$
- E. $\sqrt{2}/2$



Solution:

Line OP =>

$$y=mx \Rightarrow 1 = -\sqrt{3} * m$$

Hence, slope of OP = $-1/\sqrt{3}$

Since OP is perpendicular to OQ =>

$$m_1 * m_2 = -1$$

Hence, slope of OQ = $\sqrt{3}$

Therefore, the equation of line OQ is $y = \sqrt{3}x$

since s and t lie on this line $t = \sqrt{3}s$

$$\text{also radius of circle} = \sqrt{1+3} = 2 = \sqrt{s^2+t^2}$$

$$\text{Hence, } 4 = s^2 + t^2$$

$$4 = s^2 + 3s^2$$

$$4 = 4s^2$$

$$\Rightarrow s = 1$$

Answer: B

Key point: Keep in mind the concepts of Slopes.

12. A certain city with a population of 132,000 is to be divided into 11 voting districts, and no district is to have a population that is more than 10 percent greater than the population of any other district. What is the minimum possible population that the least populated district could have?

- A. 10,700
- B. 10,800
- C. 10,900
- D. 11,000
- E. 11,100

Solution:

As "no district is to have a population that is more than 10 percent greater than the population of any other district", the populations of 11 districts should be in the range: x and $1.1x$.

So we want to minimize x . To minimize x we should make only one district have that # of population (minimum possible) and push the other ten districts to the maximum possible - that is, $1.1x$ # of population.

$$x + 10 * 1.1x = 132$$

$$12x = 132$$

$$x = 11.$$

Answer: D

Key point: To minimize one district population maximize all the other districts.

13. In a class of 30 students, 2 students did not borrow any books from the library, 12 students each borrowed 1 book, 10 students each borrowed 2 books, and the rest borrowed at least 3 books. If the average number of books per student was 2, what is the maximum number of books any single student could have borrowed?

- A. 3
- B. 5
- C. 8
- D. 13
- E. 15

Solution:

"The average number of books per student was 2". This means that a total of $2 \times 30 = 60$ books were borrowed.

$2 + 12 + 10 = 24$ students borrowed total of $2 \times 0 + 12 \times 1 + 10 \times 2 = 32$ books;

So $60 - 32 = 28$ books are left to distribute among $30 - 24 = 6$ students.

These 6 are "the rest who borrowed at least 3 books"

To maximize the number of books one student from the above six could have borrowed, we should minimize the number of books other 5 students could have borrowed. The minimum number of books these 5 students could have borrowed is 3 books per student, so total number of books they could have borrowed is $5 \times 3 = 15$ books. So the 6th student could have borrowed $28 - 15 = 13$ books.

Answer: D

Key point: To maximize the number of books of a single student minimize the number of books of all the number of students.

14. The temperature of a certain cup of coffee 10 minutes after it was poured was 120 degrees Fahrenheit. If the temperature F of the coffee t minutes after it was poured can be determined by the formula $F = 120(2^{-at}) + 60$, where F is in degrees Fahrenheit and a is a constant. Then the temperature of the coffee 30 minutes after it was poured was how many degrees Fahrenheit?

- A. 65
- B. 75
- C. 80
- D. 85
- E. 90

Solution:

The temperature of coffee 10 minutes after it was poured (120 F) will help in solving the constant "a".

$$120 = 120(2^{-10a}) + 60$$

$$2^{-1} = 2^{-10a}$$

$$a = -1/10$$

The temperature of coffee 30 minutes after it was poured is:

$$F = 120(2^{-30/10}) + 60$$

$$F = 120 * 1/8 + 60$$

$$F = 15 + 60$$

$$F = 75.$$

Answer: B

Key Point: Keep your calm when you see equations with exponents of higher power or negative powers.

15. Which of the following lists the number of points at which a circle can intersect a triangle?

- A. 2 and 6 only
- B. 2, 4 and 6 only
- C. 1, 2, 3 and 6 only
- D. 1, 2, 3, 4 and 6 only
- E. 1, 2, 3, 4, 5 and 6 only

Solution:

Circle can intersect triangle at one of the vertices - 1 point of intersection;

Circle can intersect triangle at two of the vertices - 2 points of intersection;

Circle can intersect triangle at three of the vertices (inscribed triangle or inscribed circle) - 3 points of intersection;

Circle can intersect triangle at two of the vertices and two sides - 4 points of intersection;

Circle can intersect triangle at one of the vertex and cut three sides (one side twice and other two once) two sides - 5 points of intersection;

Circle can cut all three sides twice - 6 points of intersection.

Hence circle can intersect triangle at 1, 2, 3, 4, 5 or 6 points. (The examples provided are not the only possible cases of intersection points, these examples just prove that one to six intersection points are possible).

Answer: E.

Key Point: Visualizing is the key for these type of questions. Draw it on the scratch pad.

16. Adam and Beth each drove from Smallville to Crown City by different routes. Adam drove an average speed of 40 miles per hour and completed the trip in 30 minutes. Beth's route was 5 miles longer, and it took her 20 minutes more than Adam to complete the trip. How many miles per hour was Beth's average speed on this trip?

- A. 24
- B. 30
- C. 48
- D. 54
- E. 75.

Solution:

Adams drove at 40mph for 30 minutes. Thereby, he drove 20 miles.

"Beth's route was 5 miles longer", so:

Beth route: 25miles (20+5)

"It took her 20mins more than Adam to complete the trip", so:

Beth took 50 minutes to complete the trip (30+20)

So we have,

Beth drove at X mph for 50 minutes and covered 25miles

Speed=Distance/Time

Speed=25/50

To convert it to per hour you cross-multiply it -

$$25/50=x/60$$

$$(60*25)/50=x$$

$$x=30$$

Answer: B

Key Point: Framing the equation is the key here. Read the full question carefully.

17. When a certain tree was first planted, it was 4 feet tall, and the height of the tree increased by a constant amount each year for the next 6 years. At the end of the 6th year, the tree was $1/5$ taller than it was at the end of the 4th year. By how many feet did the height of the tree increase each year?

A. $3/10$

B. $2/5$

C. $1/2$

D. $2/3$

E. $6/5$

Solution:

Let the rate of increase be x feet per year.

At the end of the 4th year the height was $4+4x$.

At the end of the 6th year the height was $4+6x$, which was " $1/5$ taller than it was at the end of the 4th year"

That is $\Rightarrow$

$$(4+4x)+1/5(4+4x) = 4+6x \rightarrow 15(4+4x)=20x$$

Hence, $x=2/3$.

Answer: D.

Key Point: This is a classic word problem. There are two things to keep in mind -

1. Figuring out what the variable should be.
2. Framing the equation correctly.

18. If n and y are positive integers and $450y = n^3$, which of the following must be an integer?

I. $y / (3 * 2^2 * 5)$

II. $y / (3^2 * 2 * 5)$

III. $y / 3 * 2 * 5^2$

A. None.

B. I only.

C. II only.

D. III only.

E. I, II, and III.

Solution:

Factorizing 450, we have $450y = 2 * 3^2 * 5^2 * y = n^3$

As y and n are positive integers, y must complete the powers of 2, 3 and 5 so that these powers will be the multiples of 3.

Hence the least value of y is $2^2 * 3 * 5$.

As the least value of y must be $2^2 * 3 * 5$,

1. $y / (2^2 * 3 * 5)$, will be equal to 1.

2. $y / (3^2 * 2 * 5)$ is not an integer (for minimum value of y)

3. $y / 3 * 2 * 5^2$ is not an integer (for minimum value of y)

Answer: B

Why are we taking the least value? Because, for a Must-Be question, if something is true for the least value, it will be true for higher values as well.

Key Point: Whenever you look at exponents, always try to factorize to primes. Also, for a MUST BE question, it is always better to disprove the statements rather than prove them.

19. Company C has a machine that, working alone at its constant rate, processes 100 units of a certain product in 5 hours. If company C plans to buy a new machine that will process this product at a constant rate and if the two machines working together at their respective constant rates are to process 100 units of this product in 2 hours what should be the constant rate in units per hour of the new machine?

- A. 50
- B. 45
- C. 30
- D. 25
- E. 20

Solution:

Here the job is constant: 100 machines.

Formula : $\frac{1}{r} + \frac{1}{s} = \frac{1}{h}$

where r and s are the number of hours required by machines r and s to complete a job separately, and h is the number of hours required by both machines together for the same job.

Here number of hours required by machine r = 5, total time taken by both machines is 2, and we don't know for machine s.

Applying the values to the above said formula:

$$1/5 + 1/s = 1/2$$

solving for s:

$$2s+10=5s$$

$$3s=10$$

$$s=10/3$$

So time taken for the machine s to produce 100 units is $10/3$ hrs.

But the question asked is rate of "s". We need to find the no of units per hour.

$10/3$ hrs -> 100 units

$$1 \text{ hr} \rightarrow (100 * 1) / (10/3)$$

Solving would give the answer as 30

So the rate of new machine s is 30.

Answer: C

Key Point: Read the full question carefully. For word problems in rate, take care to form the equation carefully.

20. A set of 15 different integers has median of 25 and a range of 25. What is greatest possible integer that could be in this set?

A. 32

B. 37

C. 40

D. 43

E. 50

Solution:

A set of 15 different integers has a median of 25 and a range of 25. What is greatest possible integer that could be in this set?

Given 15 different integers, let's say -

$n_1, n_2, n_3, n_4, n_5, n_6, n_7, n_8, n_9, n_{10}, n_{11}, n_{12}, n_{13}, n_{14}, n_{15}$

Also given median is 25, i.e. $n_8 = 25$

Therefore, the set becomes - $n_1, n_2, n_3, n_4, n_5, n_6, n_7, 25, n_9, n_{10}, n_{11}, n_{12}, n_{13}, n_{14}, n_{15}$

As each integer is different, we need to find the maximum values for all those numbers before the median.

The maximum value n_7 can have is one less than the median i.e. 24, similarly n_6 will be one less than 24 i.e. 23 ... using this process, the values for all number before the median would be.

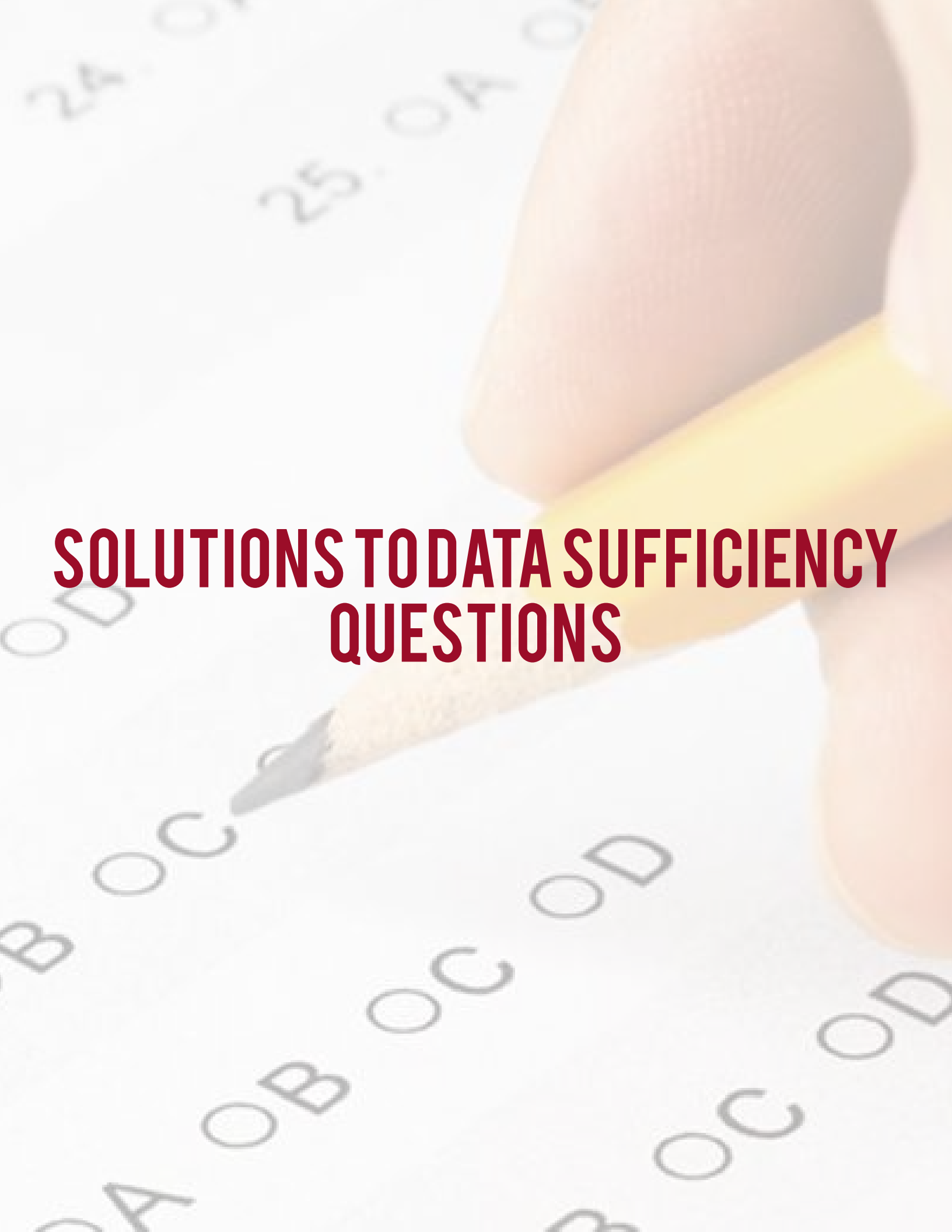
18, 19, 20, 21, 22, 23, 24, 25, n_9 , n_{10} , n_{11} , n_{12} , n_{13} , n_{14} , n_{15}

Also given the range is 25 i.e. $n_{15} - n_1 (18) = 25$

The maximum value n_{15} can have is $25 + n_1 (18) = 43$.

Answer: D

Key Point: To find the maximum value of the set, we need to find the maximum value from the least (to the left of the median).

A hand holding a yellow pencil is pointing at a document. The document contains various data labels, including '24.0', '25.04', 'OC', 'OB', and 'OD'. The text 'SOLUTIONS TO DATA SUFFICIENCY QUESTIONS' is overlaid in the center.

SOLUTIONS TO DATA SUFFICIENCY QUESTIONS

1. Of the 60 animals on a certain farm, $\frac{2}{3}$ are either pigs or cows. How many of the animals are cows?

(1) The farm has more than twice as many cows as it has pigs.

(2) The farm has more than 12 pigs.

Solution:

Statement I is insufficient:

The farm has more than twice as many cows as it has pigs -->

So, we have $c > 2p$ and not $c = 2p$ AND $c + p = 40$.

Many combinations are possible: (27,13), (28, 12) . Hence, statement 1 is not sufficient.

Statement II is insufficient:

(2) $p > 12$. Not sufficient

Together they are sufficient.

$p > 12$ but $p \text{ max} = 13$, hence $p = 13 \rightarrow c = 27$. Hence sufficient.

Answer:C

Key Point: It is important to keep in mind that the problem statement says that 'it is more than twice' , not 'more than or equal to twice'.

2. On Jane's credit card account, the average daily balance for a 30-day billing cycle is the average(arithmetic mean) of the daily balances at the end of each of the 30 days. At the beginning of a certain 30 -day billing cycle, Jane's credit card account had a balance of \$600. Jane made a payment of \$300 on the account during the billing cycle.

If no other amounts were added to or subtracted from the account during the billing cycle, what was the average daily balance on Jane's account for the billing cycle?

(1) Jane's payment was credited on the 21st day of the billing cycle.

(2) The average daily balance through the 25th day of the billing cycle was \$540.

Solution:

The question basically asks, on which day did Jane make the payment of \$300?

Algebraically,

$$\text{Average daily balance} = (x * 600 + (30 - x) * 300) / 30$$

That is, for the first x days the balance will be \$600 and then for $(30 - x)$ days the balance will be $\$600 - \$300 = \$300$ (meaning that Jane made a payment of \$300 on the $(x+1)^{\text{st}}$ day).

So all we need to know is, on which day did Jane make the payment of \$300, the value of $x+1$.

Statement I is sufficient:

Jane's payment was credited on the 21st day of the billing cycle.

This directly gives the value of $x+1 \rightarrow x+1=21 \rightarrow x=20$: for 20 days the balance was \$600 and for the rest 10 days (from 21st) it was \$300 . We can find the average daily balance. Sufficient.

Statement II is sufficient:

The average daily balance through the 25th day of the billing cycle was \$540.

Average 25 days = $540 = x * 600 + (25 - x) * 300 / 25 \rightarrow$ we can find $x \rightarrow$ we can find the average daily balance. Sufficient.

Answer: D

Key Point: Many struggle to understand the question and frame the equation. If you are able to frame the equation then the solution is quite easy.

3. Machines X and Y work at their respective constant rates. How many more hours does it take machine Y, working alone, to fill a production order of a certain size than it takes machine X, working alone?

(1) Machines X and Y, working together, fill a production order of this size in two-thirds the time that machine X, working alone, does.

(2) Machine Y, working alone, fills a production order of this size in twice the time that machine X, working alone, does.

Solution:

Let x and y be the times needed for machines X and Y respectively working alone to fill a production order of this size.

Question: $y-x=?$

Statement I is insufficient:

Machines X and Y, working together, fill a production order of this size in $\frac{2}{3}$ the time that machine X, working alone, does.

Rate of machine X is $\frac{1}{x}$.

Rate of machine Y is $\frac{1}{y}$.

$$\frac{1}{x} + \frac{1}{y} = \frac{(x+y)}{xy}.$$

Total time needed for machines X and Y working together is total time $= \frac{xy}{(x+y)}$.
given $\frac{(xy)}{(x+y)} = x * \frac{2}{3} \rightarrow 2x=y$. Not sufficient.

Statement II is insufficient:

Machine Y, working alone, fills a production order of this size in twice the time that machine X, working alone, does $\rightarrow 2x=y$, the same info. Not sufficient

Taken together, we do not get any new information. So Statement 1 and 2 together are also not sufficient.

Answer: E

Key Point : Many choose answer as C because there are two equations and two variables. But the trick is that both statements give the same equations.

4. Is $1/(a - b) < b - a$?

(1) $a < b$.

(2) $1 < |a - b|$.

Solution:

Question is $1/(a - b) < b - a$?

Statement I is sufficient:

$a < b \rightarrow$ we can rewrite this as: $a - b < 0$, so LHS is negative, also we can rewrite it as: $b - a > 0$ so RHS is positive $\rightarrow$ negative < positive. Sufficient.

Statement II is insufficient:

$1 < |a - b| \rightarrow$

If $a - b = 2$ (that is, $b - a = -2$) then $LHS > 0$ and $RHS < 0$ and in this case the answer will be NO

$a - b = -2$ (or which is the same $b - a = 2$) then $LHS < 0$ and $RHS > 0$ and in this case the answer will be YES.

Hence, this statement is not sufficient.

Answer: A

Key Point: Inequalities is a tricky topic to handle. In this question, before you start plugging in, analyse the question for a while with the rules of Inequalities and Absolute values.

5. Is $\sqrt{(x-3)^2} = 3-x$?

(1) $x \neq 3$

(2) $-x|x| > 0$

Solution:

We know that the LHS of the question is

$\sqrt{(x-3)^2} = |x-3|$ and so now the question becomes is: $|x-3| = 3-x$?

When $x > 3$, then RHS (right hand side) is negative, but LHS (absolute value) is never negative, hence in this case the equation doesn't hold true.

When $x \leq 3$, then $LHS = |x-3| = -x+3 = 3-x = RHS$, hence in this case equation holds true.

Basically question asks is $x \leq 3$?

Statement I is insufficient: $x \neq 3$. Clearly insufficient.

Statement II is sufficient: $-x|x| > 0$, basically this inequality implies that $x < 0$, hence $x < 3$. Sufficient.

Answer: B

Key Point: Here many will miss understanding that the number inside the square root can be negative.

6. During a 40-mile trip, Marla travelled at an average speed of x miles per hour for the first y miles of the trip and at an average speed of $1.25x$ miles per hour for the last $40 - y$ miles of the trip. The time that Marla took to travel the 40 miles was what percent of the time it would have taken her if she had travelled at an average speed of x miles per hour for the entire trip?

(1) $x = 48$

(2) $y = 20$

Solution:

Let $t_1 = (y/x) + (40 - y)/1.25x = (0.25y + 40)/1.25x$;

time taken with average speed of $x = 40/x$;

Question is asking, what is t_1 / t_2 ?

$$t_1 / t_2 = (0.25y + 40)/(1.25x) * x/40 = (0.25y + 40)/1.25 * 140.$$

So we need the y value to answer this question.

Statement I is insufficient:

We are looking for y not x .

$x = 48$. Not sufficient.

Statement II is sufficient: $y = 20$. Sufficient.

Answer: B

Key Point: Here again forming the problem is what matters. Take the information from the question stem and then ask yourself what is needed to solve the problem.

7. If it took Carlos $\frac{1}{2}$ hour to cycle from his house to the library yesterday, was the distance that he cycled greater than 6 miles? (Note: 1 mile = 5,280 feet)

(1) The average speed at which Carlos cycled from his house to the library yesterday was greater than 16 feet per second.

(2) The average speed at which Carlos cycled from his house to the library yesterday was less than 18 feet per second.

Solution:

$rt=d$ (where r is the rate in miles per hour, d is distance and t is time taken)

We are asked, is $d > 6$

Then the question becomes: Is $rt=d > 6 \rightarrow$ or is $r * \frac{1}{2} > 6$, as $t = \frac{1}{2}$ hour $\rightarrow$ is $r > 12$ miles/hour? $\rightarrow$ 12 miles/hour

Converting this to feet –

$(12 * 5280) / (60 * 60)$ feet/second = 17.6 feet/sec. Is $r > 17.6$ feet/sec?

Statement I is insufficient: $r > 16$ feet/sec. Not sufficient.

Statement I is insufficient: $r < 18$ feet/sec. Not sufficient.

Together $16 < r < 18$ are still not sufficient to say whether

$r > 17.6$.

Answer: E

Key Point: Students miss understanding that r is not necessarily an integer.

8. If the integers a and n are greater than 1 and the product of the first 8 positive integers is a multiple of a^n , what is the value of a ?

(1) $a^n = 64$

(2) $n = 6$

Solution:

Prime factorization would be the best way to solve this question.

Given: $a^n * k = 8! = 2^7 * 3^2 * 5 * 7$.

Question: $a = ?$

Statement I is insufficient: $a^n = 64 = 2^6 = 4^3 = 8^2$, so ' a ' could be 2, 4, or 8.
Not sufficient.

Statement II is sufficient: $n = 6 \rightarrow$ the only integer (more than 1), which is a factor of $8!$, and has the power of 6 (at least) is 2, hence $a = 2$. Sufficient.

Answer: B

Key Point: Prime factorization is the key to solve this question.

9. Is $|x-y| > |x| - |y|$?

(1) $y < x$

(2) $xy < 0$

Solution:

$|x-y| > |x| - |y|$?

Statement I is insufficient:

$y < x$.

$x=2$ and $y=1 \rightarrow |x-y|=1 = 1=|x|-|y|$; answer to the question is NO

$x=-2$ and $y=-3 \rightarrow |x-y|=1 > -1=|x|-|y|$. Answer to the question is YES.

Hence, statement I is not sufficient.

Statement II is sufficient:

$xy < 0$. That is, one positive number and one negative.

$x=3$ and $y=-2 \rightarrow |x-y|=5 > 1=|x|-|y|$; answer to the question is YES.

$x=-3$ and $y=2 \rightarrow |x-y|=5 > 1=|x|-|y|$; answer to the question is YES.

It is sufficient.

Answer: B

Key Point: Analyzing the question stem is key. If we understood that one positive and one negative is what we are looking for, the answer is easy to arrive at.

10. If Bob produces 36 or fewer items in a week, he is paid X dollars per item. If Bob produces more than 36 items in a week, he is paid X dollars per item for the first 36 items and $\frac{3}{2}$ times that amount for each additional item. How many items did Bob produce last week?

(1) Last week Bob was paid total of \$480 for the items that he produced that week.

(2) This week Bob produced 2 items more than last week and was paid a total of \$510 for the items that he produced this week.

Solution:

First let's set the equation for Bob's income:

Let I be the Bob's income

$I = nx$, when $n \leq 36$,

OR

$I = 36x + (n - 36)1.5x = 1.5nx - 18x$, when $n > 36$.

$n = ?$

Statement I is insufficient:

Last week Bob was paid total of \$480 for the items that he produced that week.

$I = 480$. Clearly insufficient.

Either: $I = 480 = nx$

OR

$I = 480 = 1.5nx - 18x$

Statement II is insufficient:

This week Bob produced 2 items more than last week and was paid a total of \$510 for the items that he produced this week.

$I' = 510$, $n' = n + 2$. Clearly insufficient.

Either: $I' = 510 = (n + 2)x$

OR

$I' = 510 = 1.5(n + 2)x - 18x$

Together too, it is not sufficient:

We can have three system of equations:

$480 = nx$ and $510 = (n + 2)x$, meaning that $n + 2 \leq 36$. In this case $x = 15$ and $n = 32$.

OR:

$480 = nx$ and $510 = 1.5(n + 2)x - 18x$, meaning that $n + 1 \leq 36$ and $n + 2 > 36$ ($n = 35$).

In this case n has no integer value, so this system doesn't work;

OR:

$480 = 1.5nx - 18x$ and $510 = 1.5(n + 2)x - 18x$, meaning that $n > 36$. In this case $x = 10$ and $n = 44$.

So we can have two values for n . Thereby, statements I and II together are also not sufficient.

Answer: E

Key Point: Here many will fall for the trap of C- together sufficient. Thinking that there are two equations and two variables, which is not the case here. Read the question carefully.

11. Circle C and line k lie in the xy-plane. If circle C is centered at the origin and has radius 1, does line k intersect circle C?

(1) The x-intercept of line k is greater than 1.

(2) The slope of line k is $-(1/10)$.

Solution:

Obviously each statement alone is not sufficient.

Statement I is insufficient: We know only the x-intercept is greater than 1. Which does not help us arrive at the answer.

Statement II is insufficient: This talks about the slope. We know that slope is negative. Hence, this is not sufficient too.

So statement I and II together:

$$y = -(1/10)x + a$$

Finding x intercept:

$$0 = -(1/10)x + a$$

$$x = 10a$$

So two points on the line are $(10a, 0)$ and $(0, a)$

From statement 1, it follows that $a > 1$.

Assume that $a = 1$, then the points on a line are $(10,0)$ and $(0,1)$.

This line with $a = 1$ intercepts the circle at 2 points. Since it intercepts the circle at 2 points, there must be other lines with $a > 1$ that still intercept the circle.

However, as value of ' a ' increases, the line shifts to the right and up...eventually it will be tangent to the circle and then outside the circle.

Since we do not know the value of ' a ', three options are possible for $a > 1$:

1) the line intercepts the circle at 2 points

2) the line is tangent to the circle

3) the line is outside the circle.

Since we do not know the exact value for a , we can't determine if the line intercepts the circle.

Answer: E

Key Point: Visualizing is the key to solve this question.

12. If n is a positive integer and r is the remainder when $(n-1)(n+1)$ is divided by 24, what is the value of r ?

(1) n is not divisible by 2

(2) n is not divisible by 3

Solution:

We know that, $(n-1)(n+1)=n^2-1$.

Let's check for (n^2-1) .

Statement I is insufficient: n is not divisible by 2 .

Let's pick two odd numbers:

let's say 1 and 3 --> if $n=1$, then $n^2-1=0$ and as zero is divisible by 24 (zero is divisible by any integer except zero itself) so remainder is 0 but if $n=3$, then $n^2-1=8$ and 8 divided by 24 yields remainder of 8. Two different answers, hence not sufficient.

Statement II is insufficient: n is not divisible by 3.

Pick two numbers which are not divisible by 3:

let's say 1 and 2 --> if $n=1$, then $n^2-1=0$, so remainder is 0 but if $n=2$, then $n^2-1=3$ and 3 divided by 24 yields remainder of 3. Two different answers, hence not sufficient.

Together I and II sufficient.

Let's check for several numbers which are not divisible by 2 or 3:

$n=1 \rightarrow n^2-1=0 \rightarrow$ remainder 0;

$n=5 \rightarrow n^2-1=24 \rightarrow$ remainder 0;

$n=7 \rightarrow n^2-1=48 \rightarrow$ remainder 0;

$n=11 \rightarrow n^2-1=120 \rightarrow$ remainder 0.

All the numbers will give remainder of 0. Hence Sufficient.

Answer: C

Key Point: Plug-In numbers in such a way to disprove the question according to the statement.

13. A manufacturer produced x percent more video cameras in 1994 than in 1993 and y percent more in 1995 than in 1994. If the manufacturer produced 1,000 video cameras in 1993, how many video cameras did the manufacturer produce in 1995?

(1) $xy = 20$

(2) $x + y + xy/100 = 9.2$

Solution:

In 1993: 1000

In 1994: $1000 + 10x$

Video cameras produced in 1995 = $1000 * (1 + x/100) * (1 + y/100)$

= $1000 * (1 + (x/100) + (y/100) + (xy/10000))$ cameras

= $1000 + 1000/100 (x + y + xy/100)$ cameras

= $1000 + 10 (x + y + xy/100)$ cameras

Statement I is insufficient: We know that xy but don't know x and y separately. Hence insufficient.

Statement II is sufficient: We know that $(x + y + (xy/100))$ and so can calculate the expression above. Sufficient.

Answer: B

Key point: Many don't frame the equation. If students are able to frame the equation, then this is quite an easy one to answer.

14. If $mv < pv < 0$, is $v > 0$?

(1) $m < p$

(2) $m < 0$

Solution:

Given: $mv < pv < 0 \rightarrow$ two cases:

If $v > 0$ then when dividing by v we would have: $m < p < 0$;

If $v < 0$ then when dividing by v we would have: $m > p > 0$ (flip the sign when dividing by negative value).

Statement I is sufficient:

$m < p \rightarrow$ we have the first case, so $v > 0$. Sufficient.

Statement II is sufficient:

$m < 0 \rightarrow$ we have the first case, so $v > 0$. Sufficient.

Answer: D

Key Point: Multiplying/Dividing the inequality by negative will change the sign of inequality.

15. If the prime numbers p and t are the only prime factors of the integer m , is m a multiple of $p^2 \cdot t$?

(1) m has more than 9 positive factors.

(2) m is a multiple of p^3

Solution:

If the prime numbers p and t are the only prime factors of the integer m , is m a multiple of $p^2 \cdot t$?

(1) m has more than 9 positive factors.

(2) m is a multiple of p^3

We are told that p and t are the ONLY prime factors of m . It could be expressed as

$m = p^x \cdot t^y$, where x and y are integers ≥ 1 .

Question: is m a multiple of $p^2 \cdot t$?

If m is a multiple of $p^2 \cdot t$, then m divided by $p^2 \cdot t$ should be an integer.

Statement I is insufficient:

m has more than 9 positive factors:

Formula for counting the number of distinct factors of integer x is expressed by prime factorization as: $n = a^x \cdot b^y \cdot c^z$, is $(x+1)(y+1)(z+1)$. This also includes the factors 1 and n itself.

We are told that $(x+1)(y+1) > 9$ (as we know that m is expressed as $m=p^x*t^y$)

But this is not sufficient to determine whether $x \geq 2$.

(x can be 1 and $y \geq 4$ and we would have their product > 9 , e.g. $(1+1)(4+1)=10$.) Not sufficient.

Statement II is sufficient: m is a multiple of p^3

This statement clearly gives us the value of power of p , which is 3, $x=3 > 2$. So m is a multiple of p^2 . Sufficient.

Answer: B

Key point: Remember this formula - If a number is expressed in the form $a^x * b^y * c^z$, where a, b, c are prime numbers, then the total number of factors of the number is $(x+1)(y+1)(z+1)$.

16. Is $1/p > r/(r^2 + 2)$?

(1) $p = r$

(2) $r > 0$

Solution:

Is $1/p > r/(r^2 + 2)$?

Statement I is insufficient:

$p=r \rightarrow 1/r > r/(r^2 + 2)$? $\rightarrow$ as $(r^2 + 2)$ is always positive, multiplying inequality by this expression we'll get:

$$(r^2+2)/r > r?$$

$$r+(2/r)>r?$$

$2/r > 0$? This inequality is true when $r > 0$ and not true when $r < 0$. Not sufficient.

Statement II is insufficient: $r > 0$. Not sufficient by itself.

If statement I and II are taken together, it is sufficient.

$r > 0$, $2r > 0$. Sufficient.

Answer: C

Key Point: With Inequalities, always remember we can cross- multiply if the denominator is positive.

17. Whenever Martin has a restaurant bill with an amount between \$10 and \$99, he calculates the dollar amount of the tip as 2 times the tens digit of the amount of his bill. If the amount of the Martin's most recent restaurant bill was between \$10 and \$99, was the tip calculated by the martin on this bill greater than 15 percent of the amount of the bill?

(1) The amount of the bill was between \$15 and \$50

(2) The tip calculated by Martin was \$8

Solution:

Statement I is insufficient:

The amount of the bill was between \$15 and \$50 --> $15 < \text{bill} < 50$.

Now if the bill was 20\$, then the tip would be $2 * 2 = \$4$ (2 times tens digit) so more than $0.15 * 20 = \$3$ (15% of the bill).

But if the bill was 29\$, then the tip would still be $2 * 2 = \$4$ but in this case less than $0.15 * 29 = \sim \$4.5$.

Hence not sufficient.

Statement II sufficient:

The tip calculated by Martin was \$8.

Tip=\$8 means that: $40 \leq \text{bill} < 50$ (so that the tens digit of the bill is 4).

Now, even if the bill was exactly \$50 (upper limit), 15% of it would be $0.15 * 50 = \$7.5$ and it's still less than \$8.

So the answer to the question is YES: the tip (8\$) was greater than 15% of the bill. Sufficient.

Answer: B

Key Point: Many students will fall for the trap by choosing C. If any answer sounds too obvious, always check to see if it is.

18. For Manufacturer M, the cost C of producing X units of its product per month are given by $C = kx + t$, where C is in dollars and k and t are constants. Last month, if Manufacturer M produced 1,000 units of its product and sold all the units for $k + 60$ dollars each, what was manufacturer M's gross profit on the 1000 units?

(1) Last month, Manufacturer M's revenue from the sale of the 1000 units was \$150,000

(2) Manufacturer M's cost of producing 500 units in a month is \$45,000 less than its cost of producing 1,000 units in a month.

Solution:

$$\{\text{Gross Profit}\} = \{\text{Revenue}\} - \{\text{Cost}\} = 1,000(k + 60) - (1,000k + t)$$

Statement I is insufficient:

Last month, Manufacturer M's revenue from the sale of the 1,000 units was \$150,000 --> $1,000(k+60)=150,000$ --> $k=90$. We still don't know the value of t . Not sufficient.

Statement II is insufficient:

Manufacturer M's cost of producing 500 units in a month is \$45,000 less than its cost of producing 1,000 units in a month. Given that $C=kx+t$, from this statement, $(500k+t)+45000=1000k+t$.

Now, cancel t . We get:

$500k+45000=1000k$ --> $k=90$. We still don't know the value of t . Not sufficient.

Taking statement I and II together, we know k still but not t . Hence insufficient.

Answer: E

Key Point: Remember to form the equations. For Value Based-DS questions, we need to get one distinct value.

19. If y is an integer and $y = |x| + x$, is $y = 0$?

(1) $x < 0$

(2) $y < 1$

Solution:

Notice that since $y = |x| + x$, y is never negative. If $x > 0$ (so if x is positive) then $y = x + x = 2x$ and for $x \leq 0$ (**when x is negative or zero**), then $y = -x + x = 0$.

Statement I is sufficient:

$x < 0 \rightarrow y = |x| + x = -x + x = 0$. Sufficient.

Statement II is sufficient:

$y < 1$, as we concluded y is never negative, and we are given that y is an integer, hence $y = 0$. Sufficient.

Answer: D

Key Point: Remember $|x|$ is always positive or equal to zero.

20. If $A < Y < Z < B$, is $|Y - A| < |Y - B|$?

(1) $|Z - A| < |Z - B|$

(2) $|Y - A| < |Z - B|$

Solution:

Since we are told that $A < Y$, that is $(Y - A > 0)$, $|Y - A| = Y - A$;

Since we are told that $Y < B$, that is $(Y - B < 0)$, $|Y - B| = B - Y$;

So, the question becomes: Is $Y - A < B - Y$? $\rightarrow$ Is $2Y < A + B$?

Statement I is sufficient:

$$|Z - A| < |Z - B|.$$

The same way as above:

Since we are told that $A < Z$ ($Z - A > 0$), $|Z - A| = Z - A$;

Since we are told that $Z < B$ ($Z - B < 0$), $|Z - B| = B - Z$;

So, we have that: $Z - A < B - Z \rightarrow 2Z < A + B$. Now, since $Y < Z$, then $2Y < 2Z$, so $2Y < 2Z < A + B$. Hence, statement I is sufficient.

Statement II is sufficient:

$$|Y - A| < |Z - B|.$$

Since we are told that $A < Y$ ($Y - A > 0$), $|Y - A| = Y - A$;

Since we are told that $Z < B$ ($Z - B < 0$), $|Z - B| = B - Z$;

So, we have: $Y - A < B - Z \rightarrow Y + Z < A + B$.

Now, since $Y < Z$, then $2Y < Y + Z$ ($2Y = Y + Y < Y + Z$)

So $2Y < Y + Z < A + B$. Hence, statement II is sufficient.

Answer: D

Key Point: Students often think that the definition of $|x|$ is x . But this is not the case. The actual definition of $|x|$ is

1. $|x| = x$, when $x > 0$
2. $|x| = -x$, when $x < 0$
3. $|x| = 0$, when $x = 0$

CONCLUSION

Now that you have encountered a bunch of tough GMAT questions, would you like to learn proven techniques that can help you conquer them?

Check out our GMAT trial course for winning strategies that will help you ace the GMAT!



CLICK HERE

DO IT NOW.

**SOMETIMES
'LATER'
BECOMES
'NEVER'**

**WORK
HARD
DREAM
BIG.**



CRACKVERBAL

Mentoring Achievers

Email: enquiry@crackverbal.com

Mobile: +919008166800/9008177800

www.crackverbal.com

[www.facebook.com\CrackVerbal](https://www.facebook.com/CrackVerbal)

[www.twitter.com\AskCrackVerbal](https://www.twitter.com/AskCrackVerbal)