

PRACTICE QUESTIONS**Ø6 2017****Q553**

Traverton's city council wants to minimize the city's average yearly expenditures on its traffic signal lights and so is considering replacing the incandescent bulbs currently in use with arrays of light-emitting diodes (LEDs) as the incandescent bulbs burn out. Compared to incandescent bulbs, LED arrays consume significantly less energy and cost no more to purchase. Moreover, the costs associated with the conversion of existing fixtures so as to accept LED arrays would be minimal.

Which of the following would it be most useful to know in determining whether switching to LED arrays would be likely to help minimize Traverton's yearly maintenance costs?

- (A) Whether the expected service life of LED arrays is at least as long as that of the currently used incandescent bulbs
- (B) Whether any cities have switched from incandescent lights in their traffic signals to lighting elements other than LED arrays
- (C) Whether the company from which Traverton currently buys incandescent bulbs for traffic signals also sells LED arrays
- (D) Whether Traverton's city council plans to increase the number of traffic signal lights in Traverton
- (E) Whether the crews that currently replace incandescent bulbs in Traverton's traffic signals know how to convert the existing fixtures so as to accept LED arrays

Q558

A certain automaker aims to increase its market share by deeply discounting its vehicles' prices for the next several months. The discounts will cut into profits, but because they will be heavily advertised the manufacturer hopes that they will attract buyers away from rival manufacturers' cars. In the longer term, the automaker envisions that customers initially attracted by the discounts may become loyal customers. In assessing the plan's chances of achieving its aim, it would be most useful to know which of the following?

(A) Whether the automaker's competitors are likely to respond by offering deep discounts on their own products

(B) Whether the advertisements will be created by the manufacturer's current advertising agency

(C) Whether some of the automaker's models will be more deeply discounted than others

(D) Whether the automaker will be able to cut costs sufficiently to maintain profit margins even when the discounts are in effect

(E) Whether an alternative strategy might enable the automaker to enhance its profitability while holding a constant or diminishing share of the market

Q570

For similar cars and comparable drivers, automobile insurance for collision damage has always cost more in Greatport than in Fairmont. Police studies, however, show that cars owned by Greatport residents are, on average, slightly less likely to be involved in a collision than cars in Fairmont. Clearly, therefore, insurance companies are making a greater profit on collision-damage insurance in Greatport than in Fairmont. In evaluating the argument, it would be most useful to compare

- (A) the level of traffic congestion in Greatport with the level of traffic congestion in Fairmont
- (B) the cost of repairing collision damage in Greatport with the cost of repairing collision damage in Fairmont
- (C) the rates Greatport residents pay for other forms of insurance with the rates paid for similar insurance by residents of Fairmont
- (D) the condition of Greatport's roads and streets with the condition of Fairmont's roads and streets
- (E) the cost of collision-damage insurance in Greatport and Fairmont with that in other cities

Q579

The growing popularity of computer-based activities was widely expected to result in a decline in television viewing, since it had been assumed that people lack sufficient free time to maintain current television-viewing levels while spending increasing amounts of free time on the computer. That assumption, however, is evidently false: In a recent mail survey concerning media use, a very large majority of respondents who report increasing time spent per week using computers report no change in time spent watching television. Which of the following would it be most useful to determine in order to evaluate the argument?

- (A) Whether a large majority of the survey respondents reported watching television regularly
- (B) Whether the amount of time spent watching television is declining among people who report that they rarely or never use computers
- (C) Whether the type of television programs a person watches tends to change as the amount of time spent per week using computers increases
- (D) Whether a large majority of the computer owners in the survey reported spending increasing amounts of time per week using computers
- (E) Whether the survey respondents' reports of time spent using computers included time spent using computers at work

Q586

Trancorp currently transports all its goods to Burland Island by truck. The only bridge over the channel separating Burland from the mainland is congested, and trucks typically spend hours in traffic. Trains can reach the channel more quickly than trucks, and freight cars can be transported to Burland by barges that typically cross the channel in an hour. Therefore, to reduce shipping time, Trancorp plans to switch to trains and barges to transport goods to Burland.

Which of the following would be most important to know in determining whether Trancorp's plan, if implemented, is likely to achieve its goal?

- (A) Whether transportation by train and barge would be substantially less expensive than transportation by truck
- (B) Whether there are boats that can make the trip between the mainland and Burland faster than barges can
- (C) Whether loading the freight cars onto barges is very time consuming
- (D) Whether the average number of vehicles traveling over the bridge into Burland has been relatively constant in recent years
- (E) Whether most trucks transporting goods into Burland return to the mainland empty

Q631

Scientists have modified feed corn genetically, increasing its resistance to insect pests. Farmers who tried out the genetically modified corn last season applied less insecticide to their corn fields and still got yields comparable to those they would have gotten with ordinary corn. Ordinary corn seed, however, costs less, and what these farmers saved on insecticide rarely exceeded their extra costs for seed. Therefore, for most feed-corn farmers, switching to genetically modified seed would be unlikely to increase profits.

Which of the following would it be most useful to know in order to evaluate the argument?

- (A) Whether there are insect pests that sometimes reduce feed-corn yields, but against which commonly used insecticides and the genetic modification are equally ineffective
- (B) Whether the price that farmers receive for feed corn has remained steady over the past few years
- (C) Whether the insecticides typically used on feed corn tend to be more expensive than insecticides typically used on other crops
- (D) Whether most of the farmers who tried the genetically modified corn last season applied more insecticide than was actually necessary
- (E) Whether, for most farmers who plant feed corn, it is their most profitable crop

Q632

Community activist: If Morganville wants to keep its central shopping district healthy, it

should prevent the opening of a huge SaveAll discount department store on the outskirts of Morganville. Records from other small towns show that whenever SaveAll has opened a store outside the central shopping district of a small town, within five years the town has experienced the bankruptcies of more than a quarter of the stores in the shopping district.

The answer to which of the following would be most useful for evaluating the community activist's reasoning?

(A) Have community activists in other towns successfully campaigned against the opening of a SaveAll store on the outskirts of their towns?

(B) Do a large percentage of the residents of Morganville currently do almost all of their shopping at stores in Morganville?

(C) In towns with healthy central shopping districts, what proportion of the stores in those districts suffer bankruptcy during a typical five-year period?

(D) What proportion of the employees at the SaveAll store on the outskirts of Morganville will be drawn from Morganville?

(E) Do newly opened SaveAll stores ever lose money during their first five years of operation?

Q634

In the past the country of Malvernia has relied heavily on imported oil. Malvernia recently implemented a program to convert heating systems from oil to natural gas. Malvernia currently produces more natural gas each year than it uses, and oil production in Malvernian oil fields is increasing at a steady pace. If these trends in fuel production and usage continue, therefore, Malvernian reliance on foreign sources for fuel is likely to decline soon.

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

- (A) When, if ever, will production of oil in Malvernia outstrip production of natural gas?
- (B) Is Malvernia among the countries that rely most on imported oil?
- (C) What proportion of Malvernia's total energy needs is met by hydroelectric, solar, and nuclear power?
- (D) Is the amount of oil used each year in Malvernia for generating electricity and fuel for transportation increasing?
- (E) Have any existing oil-burning heating systems in Malvernia already been converted to natural- gas-burning heating systems?

Q637

Normally, the pineal gland governs a person's sleep- wake cycle by secreting melatonin in

response to the daily cycle of light and darkness as detected by the eye. Nonetheless, many people who are totally blind due to lesions in the visual cortex of the brain easily maintain a 24-hour sleep-wake cycle. So the neural pathway by which the pineal gland receives information from the eye probably does not pass through the visual cortex.

For purposes of evaluating the argument it would be most useful to establish which of the following?

(A) Whether melatonin supplements help people who have difficulty maintaining a 24-hour sleep cycle to establish such a pattern

(B) Whether the melatonin levels of most totally blind people who successfully maintain a 24-hour sleep-wake cycle change in response to changes in exposure to light and darkness

(C) Whether melatonin is the only substance secreted by the pineal gland

(D) Whether most people who do not have a 24-hour sleep-wake cycle nevertheless have a cycle of consistent duration

(E) Whether there are any people with normal vision whose melatonin levels respond abnormally to periods of light and darkness

Q641

A certain cultivated herb is one of a group of closely related plants that thrive in soil with high concentrations of metals that are toxic to most other plants. Agronomists studying the

growth of this herb have discovered that it produces large amounts of histidine, an amino acid that, in test-tube solutions, renders these metals chemically inert. Hence, the herb's high histidine production must be the key feature that allows it to grow in metal-rich soils.

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

(A) Whether the herb can thrive in soil that does not have high concentrations of the toxic metals

(B) Whether others of the closely related group of plants also produce histidine in large quantities

(C) Whether the herb's high level of histidine production is associated with an unusually low level of production of some other amino acid

(D) Whether growing the herb in soil with high concentrations of the metals will, over time, reduce their concentrations in the soil

(E) Whether the concentration of histidine in the growing herb declines as the plant approaches maturity

Q662

Vargonia has just introduced a legal requirement that student-teacher ratios in government-

funded schools not exceed a certain limit. All Vargonian children are entitled to education, free of charge, in these schools. When a recession occurs and average incomes fall, the number of children enrolled in government-funded schools tends to increase. Therefore, though most employment opportunities contract in economic recessions, getting a teaching job in Vargonia's government-funded schools will not be made more difficult by a recession.

Which of the following would be most important to determine in order to evaluate the argument?

(A) Whether in Vargonia there are any schools not funded by the government that offer children an education free of charge

(B) Whether the number of qualified applicants for teaching positions in government-funded schools increases significantly during economic recessions

(C) What the current student-teacher ratio in Vargonia's government-funded schools is

(D) What proportion of Vargonia's workers currently hold jobs as teachers in government-funded schools

(E) Whether in the past a number of government-funded schools in Vargonia have had student-teacher ratios well in excess of the new limit

06 2016

Q56

Certain genetically modified strains of maize produce a powerful natural insecticide. The insecticide occurs throughout the plant, including its pollen. Maize pollen is dispersed by the wind and frequently blows onto milkweed plants that grow near maize fields. Caterpillars of monarch butterflies feed exclusively on milkweed leaves. When these caterpillars are fed milkweed leaves dusted with pollen from modified maize plants, they die. Therefore, by using genetically modified maize, farmers put monarch butterflies at risk. Which of the following would it be most useful to determine in order to evaluate the argument?

(A) Whether the natural insecticide is as effective against maize-eating insects as commercial insecticides typically used on maize are

(B) Whether the pollen of genetically modified maize contains as much insecticide as other parts of these plants

(C) Whether monarch butterfly caterpillars are actively feeding during the part of the growing season when maize is releasing pollen

(D) Whether insects that feed on genetically modified maize plants are likely to be killed by insecticide from the plant's pollen

(E) Whether any maize-eating insects compete with monarch caterpillars for the leaves of milkweed plants growing near maize fields

Q110

Although custom prosthetic bone replacements produced through a new computer-aided design process will cost more than twice as much as ordinary replacements, custom replacements should still be cost-effective. Not only will surgery and recovery time be reduced, but custom replacements should last longer, thereby reducing the need for further hospital stays.

Which of the following must be studied in order to evaluate the argument presented above?

- (A) The amount of time a patient spends in surgery versus the amount of time spent recovering from surgery
- (B) The amount by which the cost of producing custom replacements has declined with the introduction of the new technique for producing them
- (C) The degree to which the use of custom replacements is likely to reduce the need for repeat surgery when compared with the use of ordinary replacements
- (D) The degree to which custom replacements produced with the new technique are more carefully manufactured than are ordinary replacements
- (E) The amount by which custom replacements produced with the new technique will drop in cost as the production procedures become standardized and applicable on a larger scale