MATH SECTION

Q1:

Country	Consumption (in millions of kilograms)
J	1,080
K	600
L	360
M	330
N	310

The table above gives the coffee consumption in 1994 for five countries. If the total coffee consumption of these countries was 40 percent of the world's coffee consumption, what was the world's coffee consumption, in millions of kilograms, in 1994?

A. 4,320
B. 4,470
C. 5,400
D. 6,480
E. 6,700

Answer:

Q2:

When positive integer x is divided by positive integer y, the remainder is 9. If x/y = 96.12, what is the value of y?

A. 96
B. 75
C. 48
D. 25
E. 12

Answer:

Q3:

Is the standard deviation of the salaries of Company Y's employees greater than the standard deviation of the salaries of Company Z's employees?

(1) The average (arithmetic mean) salary of Company Y's employees is greater than the average salary of Company Z's employees.
(2) The median salary of Company Y's employees is greater than the median salary of Company Z's employees.

A. Statement (1) **ALONE** is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) **ALONE** is sufficient, but statement (1) alone is not sufficient.

C. **BOTH** statements **TOGETHER** are sufficient, but **NEITHER** statement **ALONE** is sufficient.
D. **EACH** statement **ALONE** is sufficient.
E. Statements (1) and (2) **TOGETHER** are **NOT** sufficient.

Answer:

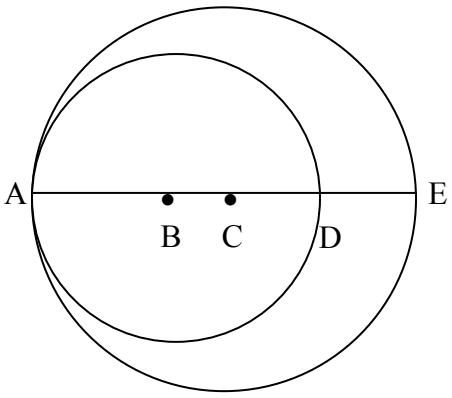
Q4:
What is the value of $v^3 - k^3$?

(1) $v\,k > 0$
(2) $v - k = 6$

A. Statement (1) **ALONE** is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) **ALONE** is sufficient, but statement (1) alone is not sufficient.
C. **BOTH** statements **TOGETHER** are sufficient, but **NEITHER** statement **ALONE** is sufficient.
D. **EACH** statement **ALONE** is sufficient.
E. Statements (1) and (2) **TOGETHER** are **NOT** sufficient.

Answer:

Q5:



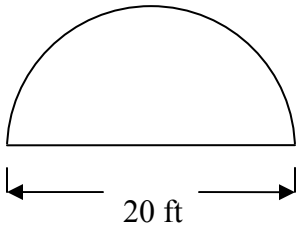
In the figure, points A, B, C, D, and E lie on a line. A is on both circles, B is the center of the smaller circle, C is the center of the larger circle, D is on the smaller circle, and E is on the larger circle. What is the area of the region inside the larger circle and outside the smaller circle?

(1) AB = 3 and BC =2
(2) CD =1 and DE = 4

A. Statement (1) **ALONE** is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) **ALONE** is sufficient, but statement (1) alone is not sufficient.
C. **BOTH** statements **TOGETHER** are sufficient, but **NEITHER** statement **ALONE** is sufficient.
D. **EACH** statement **ALONE** is sufficient.
E. Statements (1) and (2) **TOGETHER** are **NOT** sufficient.

Answer:

Q6:



The figure above shows the dimensions of a semicircular cross section of a one-way tunnel. The single traffic lane is 12 feet wide and is equidistant from the sides of the tunnel. If vehicles must clear the top of the tunnel by at least ½ foot when they are inside the traffic lane, what should be the limit on the height of vehicles that are allowed to use the tunnel?

A. 5½ ft
B. 7½ ft
C. 8 ½ ft
D. 9½ ft
E. 10 ft

Answer:

Q7:

Square S is inscribed in circle T. If the perimeter of S is 24, what is the circumference of T?

A. 6π
B. 12π
C. $3\sqrt{2}\,\pi$
D. $6\sqrt{2}\,\pi$
E. $12\sqrt{2}\,\pi$

Answer:

Q8:

The operation $\otimes$ is defined for all nonzero numbers a and b by $a \otimes b = a/b - b/a$. If x and y are nonzero numbers, which of the following statements must be true?

I. $x \otimes xy = x(1 \otimes y)$
II. $x \otimes y = -(y \otimes x)$
III. $1/x \otimes 1/y = y \otimes x$

A. I only
B. II only
C. III only
D. I and II
E. II and III

Answer:

Q9:
What was the price at which a merchant sold a certain appliance?

(1) The merchant's gross profit on the appliance was 20 percent of the price at which the merchant sold the appliance.
(2) The price at which the merchant sold the appliance was $50 more than the merchant's cost of the appliance.

A. Statement (1) **ALONE** is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) **ALONE** is sufficient, but statement (1) alone is not sufficient.
C. **BOTH** statements **TOGETHER** are sufficient, but **NEITHER** statement **ALONE** is sufficient.
D. **EACH** statement **ALONE** is sufficient.
E. Statements (1) and (2) **TOGETHER** are **NOT** sufficient.

Answer:

Q10:
An attorney charged a fee for estate planning services for a certain estate. The attorney's fee was what percent of the accessed value of the estate?

(1) The accessed value of the estate was $1.2 million.
(2) The attorney charged $2,400 for the estate planning services.

A. Statement (1) **ALONE** is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) **ALONE** is sufficient, but statement (1) alone is not sufficient.
C. **BOTH** statements **TOGETHER** are sufficient, but **NEITHER** statement **ALONE** is sufficient.
D. **EACH** statement **ALONE** is sufficient.
E. Statements (1) and (2) **TOGETHER** are **NOT** sufficient.

Answer:

Q11:
Is the sum of the integers x and y a prime number?

(1) x is an even prime number.
(2) y is a prime number between 10 and 20.

A. Statement (1) **ALONE** is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) **ALONE** is sufficient, but statement (1) alone is not sufficient.
C. **BOTH** statements **TOGETHER** are sufficient, but **NEITHER** statement **ALONE** is sufficient.

D. **EACH** statement **ALONE** is sufficient.
E. Statements (1) and (2) **TOGETHER** are **NOT** sufficient.

Answer:

Q12:
There are 11 women and 9 men in a certain club. If the club is to select a committee of 2 women and 2 men, how many different such committees are possible?

A. 120
B. 720
C. 1,060
D. 1,520
E. 1,980

Answer:

Q13:
An integer greater than 1 that is not prime is called composite. If the two-digit integer n is greater than 20, is n composite?

(1) The tens digit of n is a factor of the units digit of n.
(2) The tens digit of n is 2.

A. Statement (1) **ALONE** is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) **ALONE** is sufficient, but statement (1) alone is not sufficient.
C. **BOTH** statements **TOGETHER** are sufficient, but **NEITHER** statement **ALONE** is sufficient.
D. **EACH** statement **ALONE** is sufficient.
E. Statements (1) and (2) **TOGETHER** are **NOT** sufficient.

Answer:

Q14:
$C_{(m,n)} = m! / [(m-n)!\, n!]$ for nonnegative integers m and n, $m \geq n$. If $C_{(5,3)} = C_{(5,x)}$ and $x \neq 3$, what is the value of x?

A. 0
B. 1
C. 2
D. 4
E. 5

Answer:

Q15:
If w, x, y, and z are integers such that $1 < w < x < y < z$ and $wxyz = 462$, then z =?

A. 7
B. 11
C. 14

D. 21
E. 42

Answer:

Q16:
The sum of three integers is 40. The largest integer is 3 times the middle integer, and the smallest integer is 23 less than the largest integer. What is the product of the three integers?

A. 1,104
B. 972
C. 672
D. 294
E. 192

Answer:

Q17:
If a and b are positive, is $(a^{-1} + b^{-1})^{-1}$ less than $(a^{-1}b^{-1})^{-1}$?
(1) $a = 2b$
(2) $a + b > 1$

A. Statement (1) **ALONE** is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) **ALONE** is sufficient, but statement (1) alone is not sufficient.
C. **BOTH** statements **TOGETHER** are sufficient, but **NEITHER** statement **ALONE** is sufficient.
D. **EACH** statement **ALONE** is sufficient.
E. Statements (1) and (2) **TOGETHER** are **NOT** sufficient.

Answer:

Q18:
On a certain transatlantic crossing, 20 percent of a ship's passengers held round-trip tickets and also took their cars abroad the ship. If 60 percent of the passengers with round-trip tickets did <u>not</u> take their cars abroad the ship, what percent of the ship's passengers held round-trip tickets?

A. 33 1/3%
B. 40%
C. 50%
D. 60%
E. 66 2/3%

Answer:

Q19:
If x is an integer, which of the following must be an odd integer?

A. 2x + 2

B. $4x + 3$
C. $12x - 6$
D. $13x$
E. $14x$

Answer:

Q20:
A collection of 36 cards consists of 4 sets of 9 cards each. The 9 cards in each set are numbered 1 through 9. If one card has been removed from the collection, what is the number on that card?

(1) The units digit of the sum of the numbers on the remaining 35 cards is 6.
(2) The sum of the numbers on the remaining 35 cards is 176.

A. Statement (1) **ALONE** is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) **ALONE** is sufficient, but statement (1) alone is not sufficient.
C. **BOTH** statements **TOGETHER** are sufficient, but **NEITHER** statement **ALONE** is sufficient.
D. **EACH** statement **ALONE** is sufficient.
E. Statements (1) and (2) **TOGETHER** are **NOT** sufficient.

Answer:

Q21:
If $xy \neq 0$, is $x/y = 1$?

(1) $x^2 = y^2$
(2) $xy > 0$

A. Statement (1) **ALONE** is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) **ALONE** is sufficient, but statement (1) alone is not sufficient.
C. **BOTH** statements **TOGETHER** are sufficient, but **NEITHER** statement **ALONE** is sufficient.
D. **EACH** statement **ALONE** is sufficient.
E. Statements (1) and (2) **TOGETHER** are **NOT** sufficient.

Answer:

Q22:
A construction company was paid a total of $500,000 for a construction project. The company's only costs for the project were for labor and materials. Was the company's profit for the project greater than $150,000?

(1) The company's total cost was three times its cost for materials.
(2) The company's profit was greater than its cost for labor.

A. Statement (1) **ALONE** is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) **ALONE** is sufficient, but statement (1) alone is not sufficient.
C. **BOTH** statements **TOGETHER** are sufficient, but **NEITHER** statement **ALONE** is sufficient.
D. **EACH** statement **ALONE** is sufficient.

E. Statements (1) and (2) **TOGETHER** are **NOT** sufficient.

Answer:

Q23:

AMOUNT OF BACTERIA PRESENT

Time	Amount
1:00 P.M.	10.0 grams
4:00 P.M.	x grams
7:00 P.M.	14.4 grams

Data for a certain biology experiment are given in the table above. If the amount of bacteria present increased by the same fraction during each of the two 3-hour periods shown, how many grams of bacteria were present at 4:00 P.M.?

A. 12.0
B. 12.1
C. 12.2
D. 12.3
E. 12.4

Answer:

Q24:

The value of $(9\times10^{7})(9\times10^{8})$ is closest to which of the following?

A. 10^{16}
B. 10^{17}
C. 10^{56}
D. 10^{57}
E. 10^{58}

Answer:

Q28:

Of the goose eggs laid at a certain pond, 2/3 hatched, and 3/4 of the geese that hatched from those eggs survived the first month. Of the geese that survived the first month, 3/5 did <u>not</u> survive the first year. If 120 geese survived the first year and if no more than one goose hatched from each egg, how many goose eggs were laid at the pond?

A. 280
B. 400
C. 540
D. 600
E. 840

Answer:

VERBAL SECTION

Q12:
Which of the following most logically completes the argument?

Yorco and Zortech are two corporations that employ large numbers of full-time workers who are paid by the hour. Publicly available records indicate that Yorco employs roughly the same number of such hourly wage workers as Zortech does but spends a far higher total sum per year on wages for such workers. Therefore, hourly wages must be higher, on average, at Yorco than at Zortech, since _____.

A. Zortech spends a higher total sum per year than Yorco does to provide its hourly wage workers with benefits other than wages
B. the work performed by hourly wage workers at Zortech does not require a significantly higher level of skill than the work performed by hourly wage workers at Yorco does
C. the proportion of all company employees who are hourly wage workers is significantly greater at Yorco than it is at Zortech
D. overtime work, which is paid at a substantially higher rate than work done during the regular work week, is rare at both Yorco and Zortech
E. the highest hourly wages paid at Yorco are higher than the highest hourly wages paid at Zortech

Answer:

Q14:
Smithtown University's fund-raisers succeeded in getting donations from 80 percent of the potential donors they contacted. This success rate, exceptionally high for university fund-raisers, does not indicate that they were doing a good job. On the contrary, since the people most likely to donate are those who have donated in the past, good fund-raisers constantly try less-likely prospects in an effort to expand the donor base. The high success rate shows insufficient canvassing effort.

Which of the following, if true, provides more support for the argument?

A. Smithtown University's fund-raisers were successful in their contacts with potential donors who had never given before about as frequently as were fund-raisers for other universities in their contacts with such people.
B. This year the average size of the donations to Smithtown University from new donors when the university's fund-raisers had contacted was larger than the average size of donations from donors who had given to the university before.
C. This year most of the donations that came to Smithtown University from people who had previously donated to it were made without the university's fund-raisers having made any contact with the donors.

D. The majority of the donations that fund-raisers succeeded in getting for Smithtown University this year were from donors who had never given to the university before.
E. More than half of the money raised by Smithtown University's fund-raisers came from donors who had never previously donated to the university.

Answer:

Q17:

The quality of unrefined olive oil is not actually defined in terms of acidity, yet extensive tests have shown that the less free oleic acid an unrefined olive oil contains per liter, the higher its quality. The proportion of free oleic acid that an olive oil contains is an accurate measure of the oil's acidity.

If the statements above are all true, which of the following conclusions is best supported by them?

A. When an olive oil is refined, the concentration of oleic acid in the oil is reduced.
B. The quality of an unrefined olive oil can be determined only by accurately measuring its acidity.
C. If an unrefined olive oil is intermediate in acidity between two other unrefined olive oils, it will also be intermediate between them in quality.
D. Free oleic acid is the only acid that unrefined olive oil contains.
E. People who judge the quality of unrefined olive oils actually judge those oils by their acidity, which the judges can taste.

Answer:

Q19:

Sunflowers growing in pots were placed, with their roots submerged, in the pond contaminated with radioactive elements. The sunflowers kept growing; in the process, they absorbed radioactive elements. Within twelve days, 85 percent of the radioactive elements were removed from the water, which is no less than can be accomplished with the much more expensive conventional filtration techniques. Scientists therefore propose using sunflowers for decontamination wherever there are radioactively contaminated ponds.

Which of the following, if true, points to a limitation on the applicability of the proposed method of decontamination?

A. Some plants other than sunflowers can also remove radioactive elements from water.
B. The water in many ponds contaminated with radioactive elements is so cold that it would kill sunflowers whose roots were submerged in it.
C. Sunflowers that grow with their roots submerged in water grow less well than sunflowers growing under optimal conditions on dry land.
D. Only species of sunflowers with large leaves can have their roots submerged in water and still keep growing.

E. In ponds in which the circulation of the water is artificially increased, sunflowers absorb radioactive elements far faster than they do in other ponds.

Answer:

Q21:

Environmental organizations want to preserve the land surrounding the Wilgrinn Wilderness Area from residential development. They plan to do this by purchasing that land from the farmers who own it. That plan is ill-conceived: if the farmers did sell their land, they would sell it to the highest bidder, and developers would outbid any other bidders. On the other hand, **these farmers will never actually sell any of the land, provided that farming it remains viable.** But farming will not remain viable if the farms are left unmodernized, and most of the farmers lack the financial resources modernization requires. And that is exactly why a more sensible preservation strategy would be to assist the farmers to modernize their farms to the extent needed to maintain viability.

In the argument as a whole, the two **boldface** proportions play which of the following roles?

A. The first presents a goal that the argument rejects as ill-conceived; the second is evidence that is presented as grounds for that rejection.
B. The first presents a goal that the argument concludes cannot be attained; the second is a reason offered in support of that conclusion.
C. The first presents a goal that the argument concludes can be attained; the second is a judgment disputing that conclusion.
D. The first presents a goal, strategies for achieving which are being evaluated in the argument; the second is a judgment providing a basis for the argument's advocacy of a particular strategy.
E. The first presents a goal that the argument endorses; the second presents a situation that the argument contends must be changed if that goal is to be met in the foreseeable future.

Answer:

Q40:

Which of the following most logically completes the argument?

A new drug, taken twice daily for one month, is an effective treatment for a certain disease. The drug now most commonly prescribed for the disease occasionally has serious side effects such as seizures; in field tests, the new drug's side effects, though no worse than mild nausea, turned out to be much more frequent. Nevertheless, the new drug is clearly preferable as a treatment, since _____.

A. people who experience nausea are prone to discontinue use of the new drug prematurely
B. …
C. …

D. …
E. there is a nonprescription medication that when taken with the new drug prevents the onset of nausea

Answer:

MATH 2

Q2:
If n is a positive integer and the product of all the integers from 1 to n, inclusive, is divisible by 990, what is the least possible value of n?

A. 8
B. 9
C. 10
D. 11
E. 12

Answer:

Q3:
What is the remainder when the positive integer n is divided by 2?
(1) When n is divided by 5, the remainder is an odd integer.
(2) When n is divided by 10, the remainder is an odd integer.

A. Statement (1) **ALONE** is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) **ALONE** is sufficient, but statement (1) alone is not sufficient.
C. **BOTH** statements **TOGETHER** are sufficient, but **NEITHER** statement **ALONE** is sufficient.
D. **EACH** statement **ALONE** is sufficient.
E. Statements (1) and (2) **TOGETHER** are **NOT** sufficient.

Answer:

Q4:
What is the hundreds digit of the integer z?
(1) $10z = 93{,}120$
(2) z rounded to the nearest hundred is 9,300.

A. Statement (1) **ALONE** is sufficient, but statement (2) alone is not sufficient.

B. Statement (2) **ALONE** is sufficient, but statement (1) alone is not sufficient.
C. **BOTH** statements **TOGETHER** are sufficient, but **NEITHER** statement **ALONE** is sufficient.
D. **EACH** statement **ALONE** is sufficient.
E. Statements (1) and (2) **TOGETHER** are **NOT** sufficient.

Answer:

Q5:

The interior of a rectangular carton is designed by a certain manufacturer to have a volume of x cubic feet and a ratio of length to width to height of 3:2:2. In terms of x, which of the following equals the height of the carton, in feet?

A. $\sqrt[3]{x}$

B. $\sqrt[3]{[(2x)/3]}$

C. $\sqrt[3]{[(3x)/2]}$

D. $(2/3)\sqrt[3]{x}$

E. $(3/2)\sqrt[3]{x}$

Answer:

Q6:

Leo can buy a certain computer for p_1 dollars in State A, where the sales tax is t_1 percent, or he can buy the same computer for p_2 dollars in State B, where the sales tax is t_2 percent. Is the total cost of the computer greater in State A than in State B?

(1) $t_1 > t_2$

(2) $p_1t_1 > p_2t_2$

A. Statement (1) **ALONE** is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) **ALONE** is sufficient, but statement (1) alone is not sufficient.
C. **BOTH** statements **TOGETHER** are sufficient, but **NEITHER** statement **ALONE** is sufficient.
D. **EACH** statement **ALONE** is sufficient.
E. Statements (1) and (2) **TOGETHER** are **NOT** sufficient.

Answer:

Q7:

Last year, 36 houses in a certain development had roof repairs and 48 houses were repainted. If 20 houses in the development had roof repairs but were not repainted last year, how many houses were repainted but did not have roof repairs?

A. 12
B. 16
C. 20
D. 28
E. 32

Answer:

Q8:

Which of the following is equal to $[1/(\sqrt{3}-\sqrt{2})]^2$?

A. 1
B. 5
C. $\sqrt{6}$
D. $5 - \sqrt{6}$
E. $5 + 2\sqrt{6}$

Answer:

Q9:

If n and t are positive integers, is n a factor of t?

(1) $n = 3^{n-z}$
(2) $t = 3^n$

A. Statement (1) **ALONE** is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) **ALONE** is sufficient, but statement (1) alone is not sufficient.
C. **BOTH** statements **TOGETHER** are sufficient, but **NEITHER** statement **ALONE** is sufficient.
D. **EACH** statement **ALONE** is sufficient.
E. Statements (1) and (2) **TOGETHER** are **NOT** sufficient.

Answer:

Q10:

On a certain date, Hannah invested $5,000 at x percent simple annual interest and a different amount at y percent simple annual interest. What amount did Hannah invest at y percent simple annual interest?

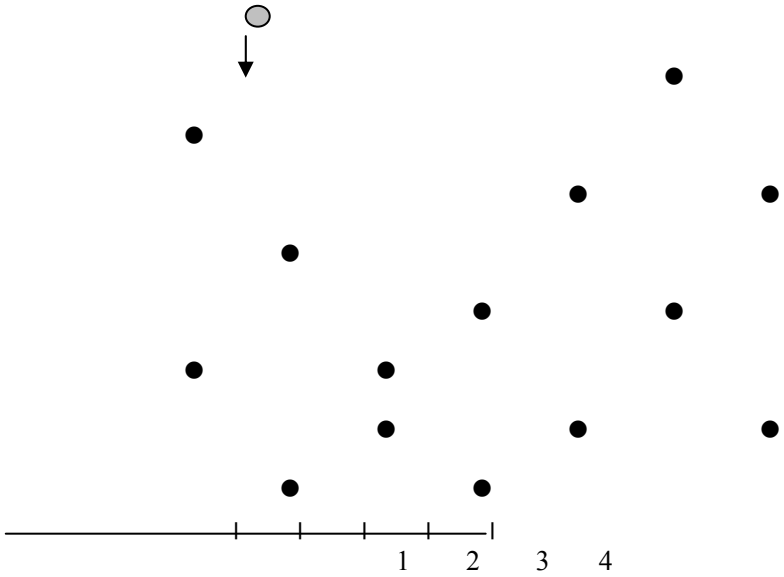
(1) The total amount of interest earned by Hannah's due investments in one year was $900.
(2) Hannah invested the $5,000 at 6 percent simple annual interest.

A. Statement (1) **ALONE** is sufficient, but statement (2) alone is not sufficient.

B. Statement (2) **ALONE** is sufficient, but statement (1) alone is not sufficient.
C. **BOTH** statements **TOGETHER** are sufficient, but **NEITHER** statement **ALONE** is sufficient.
D. **EACH** statement **ALONE** is sufficient.
E. Statements (1) and (2) **TOGETHER** are **NOT** sufficient.

Answer:

Q11:



The figure shown represents a board with 4 rows of pegs, and at the bottom of the board are 4 cells numbered 1 to 4. Whenever the ball shown passes through the opening between two adjacent pegs in the same row, it will hit the peg directly beneath the opening. The ball then has the probability 1/2 of passing through the opening immediately to the left of that peg and probability 1/2 of passing through the opening immediately to the right. What is the probability that when the ball passes through the first two pegs at the top it will end in Cell 2?

A. 1/16
B. 1/8
C. 1/4
D. 3/8
E. 1/2

Answer:

Q12:

A can manufacturing company has 5 identical machines, each of which produces cans at the same constant rate. How many cans will all 5 machines produce running simultaneously for z hours?

(1) Running simultaneously, 3 of the machines produce 72,000 cans in 2z hours.
(2) Running simultaneously, 2 of the machines produce 24,000 cans in z hours.

A. Statement (1) **ALONE** is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) **ALONE** is sufficient, but statement (1) alone is not sufficient.
C. **BOTH** statements **TOGETHER** are sufficient, but **NEITHER** statement **ALONE** is sufficient.
D. **EACH** statement **ALONE** is sufficient.
E. Statements (1) and (2) **TOGETHER** are **NOT** sufficient.

Answer:

Q13:
What is the value of xy?

(1) $2^{(x+y)} = 4$
(2) $2^{(x+3y)} = 16$

A. Statement (1) **ALONE** is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) **ALONE** is sufficient, but statement (1) alone is not sufficient.
C. **BOTH** statements **TOGETHER** are sufficient, but **NEITHER** statement **ALONE** is sufficient.
D. **EACH** statement **ALONE** is sufficient.
E. Statements (1) and (2) **TOGETHER** are **NOT** sufficient.

Answer:

Q14:
The function f is defined by $f(x) = -1/x$ for all nonzero numbers x. If $f(a) = -1/2$ and $f(ab) = 1/6$, then b =

A. 3
B. 1/3
C. - 1/3
D. -3
E. -12

Answer:

Q15:

Is xy **>** x/y?

(1) xy > 0

(2) y **<** 0

A. Statement (1) **ALONE** is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) **ALONE** is sufficient, but statement (1) alone is not sufficient.
C. **BOTH** statements **TOGETHER** are sufficient, but **NEITHER** statement **ALONE** is sufficient.
D. **EACH** statement **ALONE** is sufficient.
E. Statements (1) and (2) **TOGETHER** are **NOT** sufficient.

Answer:

Q16:

Tanks A and B are each in the shape of a right circular cylinder. The interior of tank A has a height of 10 meters and a circumference of 8 meters, and the interior of tank B has a height of 8 meters and a circumference of 10 meters. The capacity of tank A is what percent of the capacity of tank B?

A. 75%
B. 80%
C. 100%
D. 120%
E. 125%

Answer:

Q17:

Meg and Bob are among the 5 participants in a cycling race. If each participant finishes the race and no two participants finish at the same time, in how many different possible orders can the participants finish the race so that Meg finishes ahead of Bob?

A. 24
B. 30
C. 60
D. 90
E. 120

Answer:

Q18:

If xy **≠** 0 and $x^2y^2 - xy = 6$, which of the following could be y in terms of x?

I. $1/(2x)$
II. $-2/x$
III. $3/x$

A. I only
B. II only
C. I and II
D. I and III
E. II and III

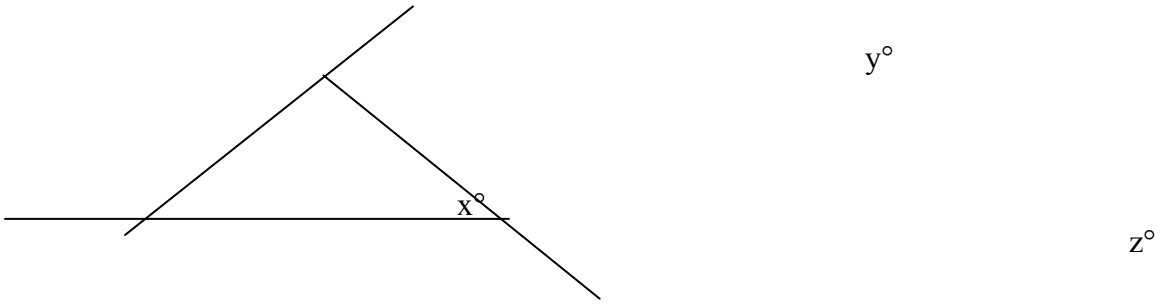
Answer:

Q19:
If y is an integer and $y = |x| + x$, is $y = 0$?
(1) $x < 0$
(2) $y < 1$

A. Statement (1) **ALONE** is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) **ALONE** is sufficient, but statement (1) alone is not sufficient.
C. **BOTH** statements **TOGETHER** are sufficient, but **NEITHER** statement **ALONE** is sufficient.
D. **EACH** statement **ALONE** is sufficient.
E. Statements (1) and (2) **TOGETHER** are **NOT** sufficient.

Answer:

Q20:



In the figure shown, what is the value of x?
(1) $y = x$
(2) $z = x$

A. Statement (1) **ALONE** is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) **ALONE** is sufficient, but statement (1) alone is not sufficient.

C. **BOTH** statements **TOGETHER** are sufficient, but **NEITHER** statement **ALONE** is sufficient.
D. **EACH** statement **ALONE** is sufficient.
E. Statements (1) and (2) **TOGETHER** are **NOT** sufficient.

Answer:

Q22:
If x is negative, is $x < -3$?

(1) $x^2 > 9$
(2) $x^3 < -9$

A. Statement (1) **ALONE** is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) **ALONE** is sufficient, but statement (1) alone is not sufficient.
C. **BOTH** statements **TOGETHER** are sufficient, but **NEITHER** statement **ALONE** is sufficient.
D. **EACH** statement **ALONE** is sufficient.
E. Statements (1) and (2) **TOGETHER** are **NOT** sufficient.

Answer:

Q23:
If $k = -1$, which of the following is (are) true?

I. $k^k = k$
II. $|k| = -k$
III. $k^0 = -k$

A. I only
B. I and II only
C. I and III only
D. II and III only
E. I, II, and III

Answer:

Q24:
A certain computer program generates a sequence of numbers $a_1, a_2, \ldots$, an such that $a_1 = a_2 = 1$ and $a_k = a_{k-1} + 2a_{k-2}$ for all integers k such that $3 \leq k \leq n$. If $n > 6$, then $a_7 = ?$

A. 32
B. 43
C. 64

D. 100
E. 128

Answer:

Q25:
If n is an integer greater than 6, which of the following must be divisible by 3?

A. n (n+1) (n-4)
B. n (n+2) (n-1)
C. n (n+3) (n-5)
D. n (n+4) (n-2)
E. n (n+5) (n-6)

Answer:

Q26:
If n is a positive integer that is less than 10, what is the value of n?
(1) n is the tenth digit in the decimal representation of 1/n.
(2) n is the hundredth digit in the decimal representation of 1/n.

A. Statement (1) **ALONE** is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) **ALONE** is sufficient, but statement (1) alone is not sufficient.
C. **BOTH** statements **TOGETHER** are sufficient, but **NEITHER** statement **ALONE** is sufficient.
D. **EACH** statement **ALONE** is sufficient.
E. Statements (1) and (2) **TOGETHER** are **NOT** sufficient.

Answer:

Q28:
At a monthly meeting, 2/5 of the attendees were males and 7/8 of the male attendees arrived on time. If 9/10 of the female attendees arrived on time, what fraction of the attendees at the monthly meeting did not arrive on time?

A. 11/100
B. 3/25
C. 7/50
D. 3/20
E. 4/25

Answer:

Q29:

In the coordinate plane, a circle has center (2, -3) and passes through the point (5, 0). What is the area of the circle?

A. 3π
B. $3\sqrt{2}\pi$
C. $3\sqrt{3}\pi$
D. 9π
E. 18π

Answer:

Q34:
What is the median number of employees assigned per project for the projects at Company Z?

(1) 25 percent of the projects at Company Z have 4 or more employees assigned to each project.
(2) 35 percent of the projects at Company Z have 2 or fewer employees assigned to each project.

A. Statement (1) **ALONE** is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) **ALONE** is sufficient, but statement (1) alone is not sufficient.
C. **BOTH** statements **TOGETHER** are sufficient, but **NEITHER** statement **ALONE** is sufficient.
D. **EACH** statement **ALONE** is sufficient.
E. Statements (1) and (2) **TOGETHER** are **NOT** sufficient.

Answer:

Q35:
p is an integer; n is an integer; and p/n is an integer. Is p/n odd?

(1) p is divisible by 4.
(2) n is divisible by 4.

A. Statement (1) **ALONE** is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) **ALONE** is sufficient, but statement (1) alone is not sufficient.
C. **BOTH** statements **TOGETHER** are sufficient, but **NEITHER** statement **ALONE** is sufficient.
D. **EACH** statement **ALONE** is sufficient.
E. Statements (1) and (2) **TOGETHER** are **NOT** sufficient.

Answer:

Q36:

What is the value of the integer N?

(1) $101 < N < 103$

(2) $202 < 2N < 206$

A. Statement (1) **ALONE** is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) **ALONE** is sufficient, but statement (1) alone is not sufficient.
C. **BOTH** statements **TOGETHER** are sufficient, but **NEITHER** statement **ALONE** is sufficient.
D. **EACH** statement **ALONE** is sufficient.
E. Statements (1) and (2) **TOGETHER** are **NOT** sufficient.

Answer:

VERBAL

Question 2 – 4:

While the most abundant and dominant species within a particular ecosystem *1*
is often crucial in perpetuating the ecosystem, a "keystone" species, here defined *2*
as one whose effects are much larger than would be predicted from its appearance, *3*
also play a vital role. But because complex species interactions may be involved, *4*
identifying a keystone species by removing the species and observing changes in 5
the ecosystem is problematic.

6

It might seem that certain traits would clearly define a species as a keystone *7*
species; for example, *Pisaster ochraceus* is often a keystone predator because it *8*
consumes and suppresses mussel populations, which in the absence of this starfish *9*
can be a dominant species. But such predation on a dominant or potentially dominant *10*
species occurs in systems that do as well as in systems that do not have species that *11*
play keystone roles. Moreover, whereas P. ochraceus occupies an unambiguous *12*
keystone role on wave-exposed rocky headlands, in more wave-sheltered habitats *13*
the impact of P. ochraceus predation is weak or nonexistent, and at certain sites sand *14*

burial is responsible for eliminating mussels. Keystone status appears to depend on *15*
context, whether of particular geography or of such factors as community diversity *16*
(for example, a reduction in species diversity may thrust more of the remaining species *17*
into keystone roles) and length of species interaction (since newly arrived species *18*
in particular may dramatically affect ecosystem).

19

Question 2:
The primary purpose of the passage is to

A. point out some of the differences between dominant and keystone species
B. emphasize the complexity of the interactions that occur between two particular species
C. detail the effect of a particular habitat on the role occupied by a certain keystone species
D. illustrate the importance of community diversity for the perpetuation of an ecosystem
E. explain some considerations involved in determining whether a species occupies a keystone role

Answer:

Question 3:
Which of the following, if true, would most clearly support the argument about keystone
status advanced in the last sentence of the passage (lines 15 – 19)?

A. A species of bat is primarily responsible for keeping insect populations within an
ecosystem low, and the size of the insect population in turn affects bird species
within that ecosystem.
B. A species of iguana occupies a keystone role on certain tropical islands, but does
not play that role on adjacent tropical islands that are inhabited by a greater number
of animal species.
C. Close observation of a savannah ecosystem reveals that more

species occupy
keystone roles within that ecosystem than biologists had previously believed.

D. As a keystone species of bee becomes more abundant, it has a larger effect on
the ecosystem it habits.
E. A species of mouse that occupies a keystone role in a prairie habitat develops
coloration patterns that camouflage it from potential predators.

Answer:

Question 4:

The passage suggests which of the following about the identification of a species as
a keystone species?

A. Such an identification depends primarily on the species' relationship to the dominant species.
B. Such an identification can best be made by removing the species from a particular
ecosystem and observing changes that occur in the ecosystem.
C. Such an identification is likely to be less reliable as an ecosystem becomes less diverse.
D. Such an identification seems to depend on various factors within the ecosystem.
E. Such an identification can best be made by observing predation behavior.

Answer:

Question 5 – 8:

This passage is based on an article written in 2000.

The traditional model of employer-employee relations in the United States was a *1*
"psychological contract" in which employees made long-term commitments to *2*
organizations in exchange for long-term job security, training and development, and *3*

internal opportunities for promotion. Beginning mainly with the recession in the early 4
1970's, this paradigm began to unravel. Organizations began using extensive downsizing 5
and outsourcing to decrease the number of permanent employees in the workforce. Among 6
employees this situation has resulted in a decided shift in desire: in stead of working their 7
way up in an organization, many now prefer to work their way out. Entrepreneurship at 8
the small business administration are now the fastest-growing majors in business schools. 9

Several factors have generated movement from the old paradigm to the new one. 10
Organizations have had legitimate and pressing reasons to shift to a new paradigm of 11
employer-employee relations. Large numbers of permanent employees make it difficult 12
for organizations to respond quickly to downturns in demand by decreasing payroll costs. 13
The enormous rights in wrongful discharge suites has created incentives for organizations 14
to use temporary, contract, and leased employees in order to distance themselves from 15
potential litigation problems. Moreover, top management is under increased pressure 16
from shareholders to generate higher and higher levels of return on investment in the 17
short run, resulting in declines in hiring, increases in layoffs, and shortage of funds for 18
employee development.

19

At the same time, a lack of forthrightness on the part of organizations has led to 20
increased cynicism among employees about management's motivation and competence. 21
Employees are now working 15 percent more hours per week than they were 20 years ago, 22
but organizations acknowledge this fact only by running stress-management workshops 23
to help employees to cope. Sales people are being asked to increase sales at the same time 24
organizations have cut travel, phone, and advertising budgets. Employees could probably 25
cope effectively with changes in the psychological contract if organizations were more 26
forthright about how they were changing it. But the euphemistic jargon used by executives 27
to justify the changes they were implementing frequently backfires; rather than 28
engendering sympathy for management's position, it sparks employees' desire to be 29

free of the organization all together. In a recent study of employees' attitudes about *30* management, 49 percent of the sample strongly agreed that "management will take *31* advantage of you if given the chance."

32

Question 5:
The primary purpose of the passage is to

A. discuss the financial implications of a recent shift in attitudes among workers
B. propose a new approach for businesses to increase loyalty among their employees
C. defend certain business practices in light of criticism of corporations, actions in a recent past
D. speculate about possible long term benefits of a recent change in the general business climate
E. consider some of the factors contributing to a major shift in employer-employee relationships

Answer:

Question 6:
The passage suggests that which of the following is a legitimate reason for organizations' shift to the new model of employer-employee relations?

A. Organizations tend to operate more effectively when they have a high manager-to-employee ratio.
B. Organizations can move their operations to less expensive locations more easily when they have fewer permanent employees.
C. Organizations have found that they often receive higher quality work when they engage in outsourcing.
D. Organizations with large pools of permanent workers risk significant financial losses

if the demand for their product or service decreases.

E. Organizations are under increasing pressure to adopt new technologies that often
obviate the need for certain workers.

Answer:

Question 7:

Which of the following best characterizes the function of the final sentence of the
passage (lines 30-32)?

A. It is such as an alternative explanation for phenomenon discussed earlier in the passage.
B. It provides data intended to correct a common misconception.
C. It further weakens an argument that is being challenged by the author.
D. It introduces a specific piece of evidence in support of a claim made at beginning
of the final paragraph (lines 20-21).
E. It answers a question that is implicit in the preceding sentence (lines 27-30).

Answer:

Question 8:

The passage suggests that organizations' movement to the "new paradigm" (line 11) is
based in part on the expectation that wrongful discharge suites against employers are?

A. less likely to be filed by non-managerial employees than by managers
B. less likely to be filed by leased employees than by contract employees
C. less likely to be filed by contract employees than by permanent employees
D. more likely to be filed by employees with a long history in the organization than

by newer hirers

E. more likely to be filed in small organizations than in large ones

Answer:----------

Question 10:

Environmentalist: The use of snowmobiles in the vast park north of Milville creates unacceptable levels of air pollution and should be banned.

Milville business spokesperson: Snowmobiling brings many out-of-towners to Milville in winter months, to the great financial benefit of many local residents. So, economics dictate that we put up with the pollution.

Environmentalist: I disagree: A great many cross-country skiers are now kept from visiting Milville by the noise and pollution that snowmobiles generate.

Environmentalist responds to the business spokesperson by doing which of the following?

A. Challenging an assumption that certain desirable outcome can derive from only one set of circumstances
B. Challenging an assumption that certain desirable outcome is outweighed by negative aspects associated with producing that outcome
C. Maintaining that the benefit that the spokesperson desires could be achieved in greater degree by a different means
D. Claiming that the spokesperson is deliberately misrepresenting the environmentalist's position in order to be better able to attack it
E. Denying that an effect that the spokesperson presents as having benefited a certain group of people actually benefited those people

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Question 11:
Many people suffer an allergic reaction to certain sulfites, including those that are
commonly added to wine as preservatives. However, since there are several wine
makers who add sulfites to none of the wines they produce, people who would like to
drink wine but are allergic to sulfites can drink wines produced by these wine makers
without risking an allergic reaction to sulfites. Which of the following is an assumption
on which the argument depends?

A. These wine makers have been able to duplicate the preservative effect produced
by adding sulfites by means that do not involve adding any potentially allergenic
substances to their wine.
B. Not all forms of sulfite are equally likely to produce the allergic reactions.
C. Wine is the only beverage to which sulfites are commonly added.
D. Apart from sulfites, there are no substances commonly present in wine that give
rise to an allergic reaction.
E. Sulfites are not naturally present in the wines produced by these wine makers in
amounts large enough to produce an allergic reaction in someone who drinks these wines.

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Question 12:
Which of the following most logically completes the passage?

Concerned about financial well-being of its elderly citizens, the government of Runagia
decided two years ago to increase by 20 percent the government-provided pension
paid to all Runagians over 65. Inflation in the intervening period has been negligible,
and the increase has been duly received by all eligible Runagians.

Nevertheless,
many of them are no better off financially than they were before the increase, in large
part because _____.

A. They rely entirely on the government pension for their income
B. Runagian banks are so inefficient that it can take up to three weeks to cash a
pension check
C. They buy goods whose prices tend to rise especially fast in times of inflation
D. The pension was increased when the number of elderly Runagians below the
poverty level reached an all-time high
E. In Runagia children typically supplement the income of elderly parents, but
only by enough to provide them with a comfortable living

Answer:

Question 18:
Last year all refuse collected by Shelbyville city services was incinerated. This
incineration generated a large quantity of residue ash. In order to reduce the amount
of residue ash Shelbyville generates this year to half of last year's total, the city has
revamped its collection program. This year city services will separate for recycling
enough refuse to reduce the number of truckloads of refuse to be incinerated to half
of last year's number.

Which of the following is required for the revamped collection program to achieve its aim?

A. This year, no materials that city services could separate for recycling will be incinerated.
B. Separating recyclable materials from materials to be incinerated will cost Shelbyville
less than half what it cost last year to dispose of the residue ash.
C. Refuse collected by city services will contain a larger proportion of recyclable
materials this year than it did last year.
D. The refuse incinerated this year will generate no more residue

ash per truckload
incinerated than did the refuse incinerated last year.

E. The total quantity of refuse collected by Shelbyville city services this year will be
no greater than that collected last year.

Answer:

MATH1:

1. D
2. B
3. A
4. B
5. E
6. E
7. E
8. C
9. E
10. D
11. D
12. C
13. D
14. E
15. B
16. C
17. E
18. D
19. C
20. A
21. E
22. B
23. A
24. A
25. A
26. E
27. C
28. E
29. D

30. E
31. B
32. D
33. E
34. D
35. D
36. C
37. E
38. E
39. E
40. D

Math2:

1. E
2. B
3. E
4. E
5. A
6. B
7. D
8. E
9. C
10. C
11. E
12. E
13. A
14. C
15. B
16. B
17. B
18. C
19. B
20. D
21. C
22. C
23. A
24. B
25. D

Verbal:

1. D
2. C
3. C
4. B
5. D
6. E
