

Math Section

Q1:

Of the fruit that arrives at a cannery, 20 percent by weight is rejected before processing. Of the fruit that is processed, 15 percent by weight is rejected before canning. Of the fruit that arrives at the cannery, what percent by weight is canned?

- A. 32%
- B. 35%
- C. 65%
- D. 68%
- E. 70%

Answer:

Q2:

What is the ratio of the average (arithmetic mean) height of students in class X to the average height of students in class Y?

- (1) The average height of the students in class X is 120 centimeters.
- (2) The average height of the students in class X and class Y combined is 126 centimeters.

- 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:

Q3:

If the length of a certain rectangle is 2 greater than the width of the rectangle, what is the perimeter of the rectangle?

- (1) The length of each diagonal of the rectangle is 10.
- (2) The area of the rectangular region is 48.

- 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:

For a nonnegative integer n , if the remainder is 1 when 2^n is divided by 3, then which of the following must be true?

- I. n is greater than zero.
- II. $3^n = (-3)^n$
- III. $\sqrt{2^n}$ is an integer.

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

Answer:

Q5:

A certain club has 20 members. What is the ratio of the number of 5-member committees that can be formed from the members of the club to the number of 4-member committees that can be formed from the members of the club?

- A. 16 to 1
- B. 15 to 1
- C. 16 to 5
- D. 15 to 6
- E. 5 to 4

Answer:

Q6:

If a company allocates 15 percent of its budget to advertising, 10 percent to capital improvements, and 55 percent to salaries, what fraction of its budget remains for other allocations?

- A. $\frac{4}{5}$
- B. $\frac{3}{5}$
- C. $\frac{3}{10}$
- D. $\frac{1}{5}$
- E. $\frac{1}{10}$

Answer:

Q7:

If $x(x - 5)(x + 2) = 0$, is x negative?

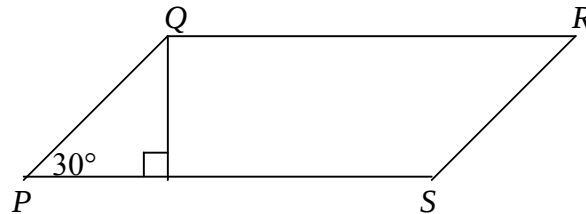
- (1) $x^2 - 7x \neq 0$
- (2) $x^2 - 2x - 15 \neq 0$

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:

Q8:



In parallelogram $PQRS$ shown, if $PQ = 4$ and $QR = 6$, what is the area of $PQRS$?

- A. 8
 B. 12
 C. 24
 D. $8\sqrt{3}$
 E. $12\sqrt{3}$

Answer:

Q9:

A certain farmer pays \$30 per acre per month to rent farmland. How much does the farmer pay per month to rent a rectangular plot of farmland that is 360 feet by 605 feet? (43,560 square feet = 1 acre)

- A. \$5,330
 B. \$3,630
 C. \$1,350
 D. \$360
 E. \$150

Answer:

Q10:

When 200 gallons of oil were removed from a tank, the volume of oil left in the tank was $\frac{3}{7}$ of the tank's capacity. What was the tank's capacity?

- (1) Before the 200 gallons were removed, the volume of oil in the tank was $\frac{1}{2}$ of the tank's capacity.
 (2) After the 200 gallons were removed, the volume of oil left in the tank was 1,600 gallons less than the tank's capacity.

- 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:

On Saturday morning, Malachi will begin a camping vacation and he will return home at the end of the first day on which it rains. If on the first three days of the vacation the probability of rain on each day is 0.2, what is the probability that Malachi will return home at the end of the day on the following Monday?

A. 0.008

B. 0.128

C. 0.488

D. 0.512

E. 0.640

Answer:

Q12:

If x and y are integers and $x > 0$, is $y > 0$?

(1) $7x - 2y > 0$

(2) $-y < x$

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:

Q13:

Lists S and T consist of the same number of positive integers. Is the median of the integers in S greater than the average (arithmetic mean) of the integers in T ?

(1) The integers in S are consecutive even integers, and the integers in T are consecutive odd integers.

(2) The sum of the integers in S is greater than the sum of the integers in T .

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:

If x percent of 40 is y , then $10x$ equals

- A. $4y$
- B. $10y$
- C. $25y$
- D. $100y$
- E. $400y$

Answer:

Q15:

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) 2 is not a factor of n .
- (2) 3 is not a factor of 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:

Q16:

In the sequence of nonzero numbers $t_1, t_2, t_3, \dots, t_n, \dots, t_{n+1} = t_n / 2$ for all positive integers n . What is the value of t_5 ?

- (1) $t_3 = 1/4$
- (2) $t_1 - t_5 = 15/16$

- 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:

Q17:

Last year the price per share of Stock X increased by k percent and the earnings per share of Stock X increased by m percent, where k is greater than m . By what percent did the ratio of price per share to earnings per share increase, in terms of k and m ?

- A. k/m %
- B. $(k - m)$ %

- C. $[100(k - m)] / (100 + k) \%$
- D. $[100(k - m)] / (100 + m) \%$
- E. $[100(k - m)] / (100 + k + m) \%$

Answer: D

Q18:

What is the total value of Company *H*'s stock?

- (1) Investor *P* owns $\frac{1}{4}$ of the shares of Company *H*'s total stock.
- (2) The total value of Investor *Q*'s shares of Company *H*'s stock is \$16,000.

- 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:

Q19:

Which of the following is equal to $(2^{12} - 2^6) / (2^6 - 2^3)$?

- A. $2^6 + 2^3$
- B. $2^6 - 2^3$
- C. 2^9
- D. 2^3
- E. 2

Answer:

Q20:

Of the students in a certain school, 15 percent are enrolled in an art class and 10 percent are enrolled in a music class. What percent of the students in the school are enrolled in neither an art class nor a music class?

- (1) $\frac{2}{3}$ of the students who are enrolled in an art class are also enrolled in a music class.
- (2) There are more than 100 students in the school.

- 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 $x < 0$, then $\sqrt{(-x \mid x)}$ is

- A. $-x$
- B. -1
- C. 1
- D. x
- E. $\sqrt{x}$

Answer:

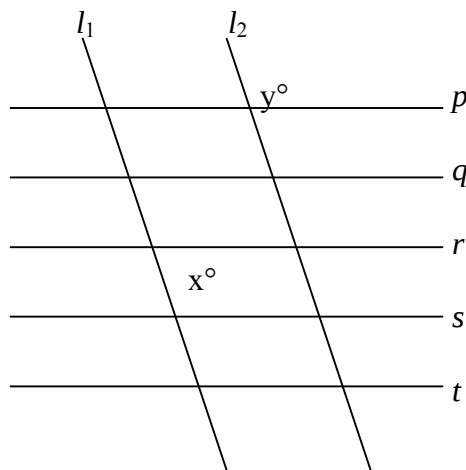
Q22:

For any integer k greater than 1, the symbol k^* denotes the product of all the fractions of the form $1/t$, where t is an integer between 1 and k , inclusive. What is the value of $5^*/4^*$?

- A. 5
- B. $5/4$
- C. $4/5$
- D. $1/4$
- E. $1/5$

Answer:

Q23:



If $l_1 \parallel l_2$ in the figure above, is $x = y$?

- (1) $p \parallel r$ and $r \parallel t$
- (2) $q \parallel s$

- 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:

Q24:

Month	Number of Days Worked
June	20
July	17
August	19

The table above shows the number of days worked by a certain sales representative in each of three months last year. If the number of sales calls that the representative made each month was proportional to the number of days worked in that month and if the representative made a total of 168 sales calls in the three months shown, how many sales calls did the representative make in August?

- A. 50
- B. 51
- C. 56
- D. 57
- E. 60

Answer:

Q25:

Pat invested x dollars in a fund that paid 8 percent annual interest, compounded annually. Which of the following represents the value, in dollars, of Pat's investment plus interest at the end of 5 years?

- A. $5(0.08x)$
- B. $5(1.08x)$
- C. $[1 + 5(0.08)]x$
- D. $(1.08)^5x$
- E. $(1.08x)^5$

Answer:

Q26:

If $n = 3k$, is k an integer?

- (1) n is an integer.
- (2) $n/6$ is an 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:

Q27:

In the xy -plane, what is the slope of the line with equation $3x + 7y = 9$?

- A. $-7/3$
- B. $-3/7$
- C. $3/7$
- D. 3
- E. 7

Answer:

Q28:

In a certain English class, $1/4$ of the number of girls is equal to $1/6$ of the total number of students. What is the ratio of the number of boys to the number of girls in the class?

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

Answer:

Q29:

If $x > 0.9$, which of the following could be the value of x ?

- A. $\sqrt{0.81}$
- B. $\sqrt{0.9}$
- C. $(0.9)^2$
- D. $(0.9)(0.99)$
- E. $1 - \sqrt{0.01}$

Answer:

Q30:

Development planners determined the number of new housing units needed in a certain area by using the formula $H = kJ$, where H is the number of new housing units needed in the area, J is the number of new jobs to be created in the area, and k is a constant. How many new housing units did the planners determine were needed?

- (1) The number of new jobs to be created was 60,000.
- (2) According to the formula used by the planners, if 37,500 jobs were to be created, then 7,500 new housing units would be needed.

- 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:

Q31:

A solid yellow stripe is to be painted in the middle of a certain highway. If 1 gallon of paint covers an area of p square feet of highway, how many gallons of paint will be needed to paint a stripe t inches wide on a stretch of highway m miles long? (1 mile = 5,280 feet and 1 foot = 12 inches)

- A. $(5,280\ mt) / 12p$
- B. $(5,280\ pt) / 12m$
- C. $(5,280\ pmt) / 12$
- D. $(5,280)(12m) / pt$
- E. $(5,280)(12p) / mt$

Answer:

Q32:

Is the integer n even?

- (1) $n - 5$ is an odd integer.
- (2) $n/5$ is an even 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:

Q33:

If $30!/10!$ is written as the product of consecutive integers, the largest of which is 30, what is the smallest of the integers?

- A. 1
- B. 3
- C. 7
- D. 11
- E. 20

Answer:

Q34:

If Antonio bought two half-gallon cartons of ice cream during a special sale, what percent of the total regular price of the two cartons did he save?

- (1) Antonio paid the regular price for the first carton and received the second carton for half the regular price.
- (2) The regular price of the ice cream Antonio bought was \$4.00 per half-gallon carton.

- 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:

If n is a positive integer, which of the following is a possible value of $|56 - 5n|$?

- A. 7
- B. 9
- C. 12
- D. 15
- E. 20

Answer:

Q36:

Is $y - x$ positive?

- (1) $y > 0$
- (2) $x = 1 - y$

- 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:

Q37:

Working alone at their respective constant rates, machine A and machine B can fill a certain order in 3 hours and 6 hours, respectively. If the two machines work simultaneously at their respective constant rates, how many hours does it take the two machines to fill $\frac{1}{2}$ of that order?

- A. $\frac{1}{2}$
- B. $\frac{3}{4}$
- C. 1
- D. $1\frac{1}{4}$
- E. $1\frac{1}{2}$

Answer:

Answers:

DEDEC, DCBED, BECCC, DDEAA, AEEDD, BBCBC, ADDAB, EC