

Math Section

Q1:

At a certain company, the average (arithmetic mean) salary of 10 of the employees is \$30,000, the average salary of 30 other employees is \$40,000, and the average salary of the remaining 20 employees is \$60,000. What is the average salary of the 60 employees at the company?

- A. \$40,000
- B. \$43,000
- C. \$45,000
- D. \$60,000
- E. \$65,000

Answer:

Q2:

The ratio of the number of women to the number of men to the number of children in a room is 5:2:7, respectively. What is the total number of people in the room?

- (1) The total number of women and children in the room is 12.
- (2) There are fewer than 4 men in the room.

- 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:

A coin that is tossed will land heads or tails, and each outcome has equal probability. What is the probability that the coin will land heads at least once on two tosses?

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

Answer:

Q4:

On a certain date, Hannah invested \$5,000 at x percent simple annual interest and a different

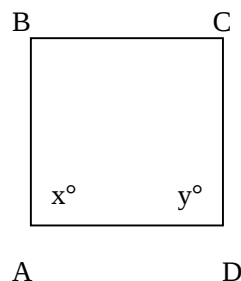
amount at y percent simple annual interest. What amount did Hannah invest at y percent simple annual interest?

- (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.

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- D. **EACH** statement **ALONE** is sufficient.
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Answer:

Q5:



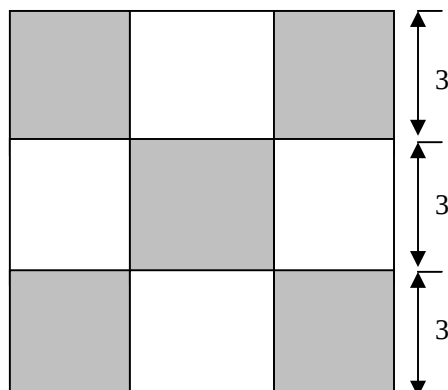
Is quadrilateral ABCD a square?

- (1) $AB = BC = CD = DA$
- (2) $x + y = 180$

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- 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.
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Answer:

Q6:





Note: Figure not drawn to scale.

The figure above represents a square garden that is divided into 9 rectangular regions with indicated dimensions in meters. The shaded regions are planted with peas, and the unshaded regions are planted with tomatoes. If the sum of the areas of the regions planted with peas is equal to the sum of the areas of the regions planted with tomatoes, what is the value of x ?

- A. 0.5
- B. 1
- C. 1.5
- D. 2
- E. 2.5

Answer:

Q7:

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

- (1) $x < 0$
- (2) $y < 1$

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Answer:

Q8:

In the sequence 1, 2, 4, 8, 16, 32, ... , each term after the first is twice the previous term. What is the sum of the 16th, 17th, and 18th terms in the sequence?

- A. 2^{18}
- B. $3(2^{17})$
- C. $7(2^{16})$
- D. $3(2^{16})$
- E. $7(2^{15})$

Answer:

Q9:

How many years did Dr. Jones live?

- (1) If Dr. Jones had become a doctor 10 years earlier than he did, he would have been a doctor for exactly $\frac{2}{3}$ of his life.
- (2) If Dr. Jones had become a doctor 10 years later than he did, he would have been a doctor for exactly $\frac{1}{3}$ of his life.

- 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.
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Answer:

Q10:

What is the hundreds digit of the integer z ?

- (1) $10z = 93,120$
- (2) z rounded to the nearest hundred is 9,300.

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

Q11:

How many different factors does the integer n have?

- (1) $n = a^4b^3$, where a and b are different positive prime numbers.
- (2) The only positive prime numbers that are factors of n are 5 and 7.

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

Q12:

If f is the function defined by $f(x) = x^2(1-x)^2$ for all x , then $f(1-x) =$

- A. $f(x)$
- B. $[f(x)]^2$

- C. $1 - f(x)$
- D. $(1-x) f(x)$
- E. $f(1) - f(x)$

Answer:

Q13:

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

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

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Answer:

Q14:

A three-digit code for certain logs uses the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 according to the following constraints. The first digit cannot be 0 or 1, the second digit must be 0 or 1, and the second and third digits cannot both be 0 in the same code. How many different codes are possible?

- A. 144
- B. 152
- C. 160
- D. 168
- E. 176

Answer:

Q15:

If the average (arithmetic mean) of 5 different numbers is 12, what is the median of the 5 numbers?

- (1) The median of the 5 numbers is equal to $\frac{1}{3}$ of the sum of the 4 numbers other than the median.
- (2) The sum of the 4 numbers other than the median is equal to 45.

- 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.
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Answer:

Q16:

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:

Q17:

A doctor prescribed 18 cubic centimeters of a certain drug to a patient whose body weight was 120 pounds. If the typical dosage is 2 cubic centimeters per 15 pounds of body weight, by what percent was the prescribed dosage greater than the typical dosage?

- A. 8
- B. 9
- C. 11
- D. 12.5
- E. 14.8

Answer:

Q18:

If $9x = 27^y$, which of the following expresses x in terms of y ?

- A. 3^y
- B. 3^{y-1}
- C. 3^{2y-1}
- D. 3^{2y-3}
- E. 3^{3y-2}

Answer:

Q19:

What is the value of xy ?

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

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Answer:

Q20:

Was Lisa's annual salary at least twice as much as Julie's annual salary?

- (1) Lisa's annual salary was \$20,000 more than Julie's annual salary.
- (2) Lisa's annual salary was less than \$40,000.

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

Q21:

An object thrown directly upward is at a height of h feet after t seconds, where $h = -16(t - 3)^2 + 150$. At what height, in feet, is the object 2 seconds after it reaches its maximum height?

- A. 6
- B. 86
- C. 134
- D. 150
- E. 214

Answer:

Q22:

At a monthly meeting, $\frac{2}{5}$ of the attendees were males and $\frac{7}{8}$ of the male attendees arrived on time. If $\frac{9}{10}$ of the female attendees arrived on time, what fraction of the attendees at the monthly meeting did not arrive on time?

- A. $\frac{11}{100}$
- B. $\frac{3}{25}$
- C. $\frac{7}{50}$
- D. $\frac{3}{20}$
- E. $\frac{4}{25}$

Answer:

Q23:

If $x^2 - y = w$, what is the value of x ?

- (1) $w + y = 4$
- (2) $y = 1$

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

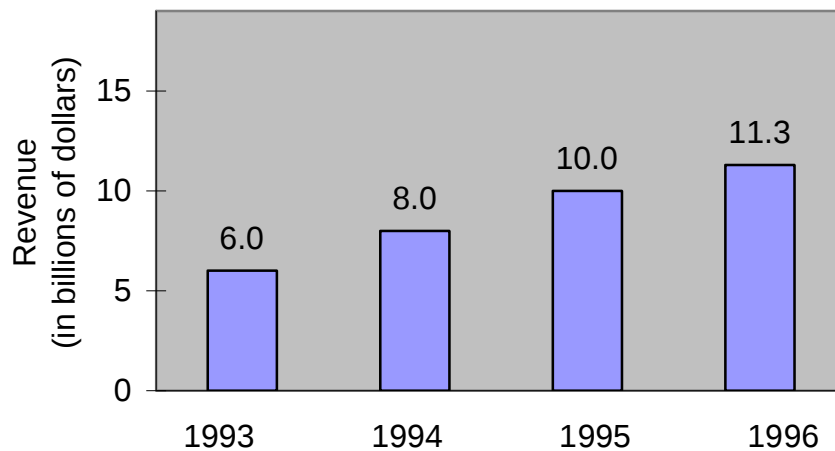
Q24:

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:

Q25:



The graph above shows the combined revenue, in billions of dollars, of a chain of food stores for each year over a four-year period. In 1994 a certain store's revenue accounted for 2.0 percent of the combined revenue for that year, and in the 1995 the same store accounted for 2.3 percent of the combined revenue for that year. What was the approximate percent increase in revenue for this store from 1994 to 1995 ?

- A. 0.3%
- B. 15.0%
- C. 25.0%
- D. 30.4%
- E. 43.8%

Answer:

Q26:

When $15n$, where n is a positive integer, is divided by 6, the remainder is x . What is the value of x ?

- (1) When n is divided by 2, the remainder is 0.
- (2) When n is divided by 3, the remainder is 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.
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Answer:

Q27:

In a survey, 2,500 executives were each asked whether they read Newsletter A or Newsletter B. According to the survey, 55 percent of the executives read Newsletter A, 62 percent read Newsletter B, and 37 percent read both Newsletter A and Newsletter B. How many of the executives surveyed read neither Newsletter A nor Newsletter B?

- A. 425
- B. 500
- C. 600
- D. 675
- E. 750

Answer:

Q28:

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:

Q29:

The points R, T, and U lie on a circle that has radius 4. If the length of arc RTU is $4\pi/3$, what is the length of line segment RU?

- A. $4/3$

- B. $\frac{8}{3}$
- C. 3
- D. 4
- E. 6

Answer:

Q30:

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.
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Answer:

Q31:

One kilogram of a certain coffee blend consists of x kilogram of type I coffee and y kilogram of type II coffee. The cost of the blend is C dollars per kilogram, where $C = 6.5x + 8.5y$. Is $x < 0.8$?

- (1) $y > 0.15$
- (2) $C \geq 7.30$

- 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.
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Answer:

Q32:

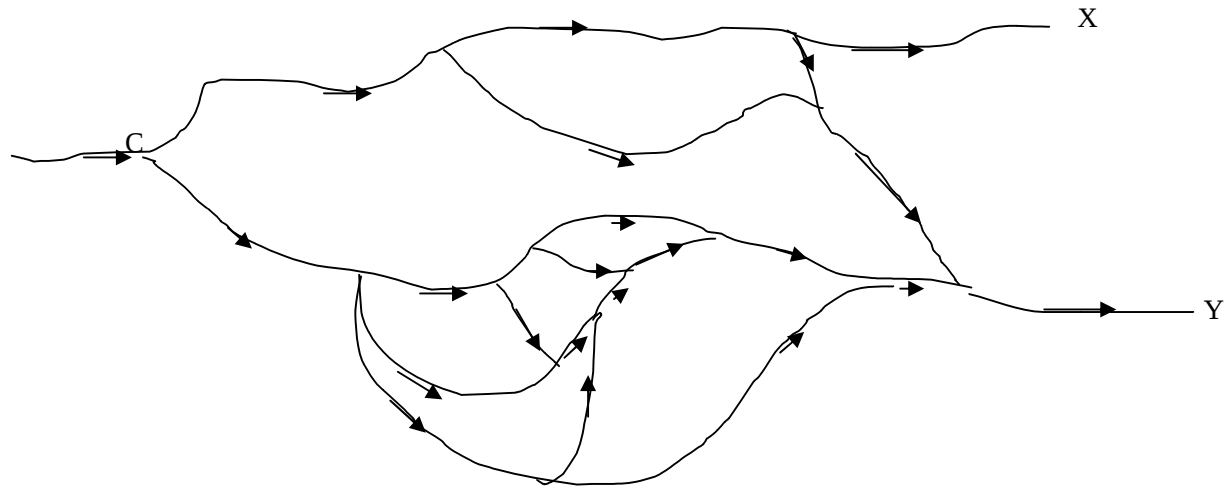
If $k = -1$, which of the following is (are) true?

- 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:

Q33:



The figure above represents a system of roads along which traffic flows in the direction indicated by the arrows. If the traffic were to split evenly at each fork of the road system, what percent of the traffic entering fork C would exit at Y?

- A. 87.5%
- B. 75%
- C. 62.5%
- D. 50%
- E. 12.5%

Answer:

Q34:

What is the remainder when the sum of the positive integers x and y is divided by 6?

- (1) When x is divided by 6, the remainder is 3.
- (2) When y is divided by 6, the remainder is 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.
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Answer:

Q35:

If $xy \neq 0$, what is the value of $1/x + 1/y$?

- (1) $1/(x+y) = -1$
- (2) $xy = 6(x+y)$

- 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.
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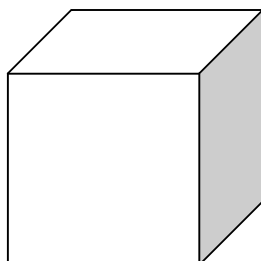
Q36:

If $b(a+1) = b$, then $ab =$

- A. -1
- B. 0
- C. 1
- D. a
- E. b

Answer:

Q37:



In the rectangular solid above, the three sides shown have areas 12, 15, and 20, respectively.
What is the volume of the solid?

- A. 60
- B. 120
- C. 450
- D. 1,800
- E. 3,600

Answer:

Answers:

CDEEE, CDECA, AAABD, ADECC, BAEBE, ABBDC, BEACB, BA