

MATH.

Q1

what is 35 percent of the sum of 1.4 and $\frac{1}{5}$?

- A. 0.42
- B. 0.56
- C. 0.85
- D. 1.55
- E. 1.95

answer:

Q2

If $x \neq y$, is $x+y=xy$?

- (1) $(1-x)(1-y)=1$
- (2) $x^2-y^2=x^2y-xy^2$

-
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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:

Q3

What is the value of the product xy ?

- (1) $\frac{x}{y}=\frac{1}{5}$
- (2) $x+y=60$

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Answer:

Q4

How many seconds will it take for a car that is traveling at a constant rate of 45 miles per hour to travel a distance of 220 yards? (1 mile=1,760 yards)

- A. 8
- B. 9

- C. 10
- D. 11
- E. 12

answer

Q5

If $x^3y^4=5,000$, is $y=5$?

- (1) y is a positive integer.
- (2) x is an integer.

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Answer:

Q6

A string of 10 lightbulbs is wired in such a way that if any individual lightbulb fails, the entire string fails. If for each individual lightbulb the probability of failing during time period T is 0.06, what is the probability that the string of lightbulbs will fail during time period T ?

- A. 0.06
- B. $(0.06)^{10}$
- C. $1-(0.06)^{10}$
- D. $(0.94)^{10}$
- E. $1-(0.94)^{10}$

Answer

Q7

If n is a positive integer, what is the remainder

When $(7^{(4n+3)})(6^n)$ is divided by 10?

- F. 1
- G. 2
- H. 4
- I. 6
- J. 8

answer

Q8

A department manager distributed a number of pens, pencils,

and pads among the staff in the department, with each staff member receiving x pens, y pencils, and z pads. How many staff members were in the department?

- (1) The numbers of pens, pencils, and pads that each staff member received were in the ratio 2:3:4, respectively.
- (2) The manager distributed a total of 18 pens, 27 pencils, and 36 pads.

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Answer:

Q9

In the xy -plane, if line k passes through the points $(3, -4)$ and (a, b) , where $b = 4a - 16$ and $a \neq 3$, what is the slope of k ?

- A. -4
- B. $-1/2$
- C. 0
- D. 2
- E. 4

answer

Q10

The sides of a square region, measured to the nearest centimeter, are 6 centimeters long. The least possible value of the actual area of the square region is

- A. 36.00 sq cm
- B. 35.00 sq cm
- C. 33.75 sq cm
- D. 30.25 sq cm
- E. 25.00 sq cm

Answer

Q11

Of the three-digit positive integers that have no digits equal to zero, how many have two digits that are equal to each other and the remaining digit different from the other two?

- A. 24
- B. 36
- C. 72
- D. 144
- E. 216

answer

Q12

Is $y^2=0$?

- (1) $3y=0$
- (2) $y^3=0$

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Answer:

Q13

If the average (arithmetic mean) of the assessed values of x houses is \$212,000 and the average of the assessed values of y other houses is \$194,000, what is the average of the assessed values of the $x+y$ houses?

- (1) $x+y=36$
- (2) $x=2y$

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Answer:

Answer

Q14

If a certain coin is flipped, the probability that the coin will land heads up is $\frac{1}{2}$. If the coin is flipped 5 times, what is the probability that it will land heads up on the first 3 flips and not on the last 2 flips?

- A. $\frac{3}{5}$

- B. $\frac{1}{2}$
- C. $\frac{1}{5}$
- D. $\frac{1}{8}$
- E. $\frac{1}{32}$

answer

Q15

Company A has a total of n employees, where n is an odd integer, and no two employees have the same annual salary. The annual salaries of the n employees are listed in increasing order, and the 16th salary in the list is the median of the annual salaries. If the sum of the annual salaries of Company A's employees is \$942,400, what is the average (arithmetic mean) of the annual salaries of Company A's employees?

- A. \$29,450
- B. \$30,400
- C. \$32,500
- D. \$47,120
- E. \$58,900

Answer

Q16

If $\sqrt{x}$ is an integer, what is the value of $\sqrt{x}$?

- (3) $11 < x < 17$
- (4) $2 < \sqrt{x} < 5$

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Answer:

Q17

If $P(r) = 8r/(1-r)$, for what value of r does $P(r) = 1/2(P(3))$?

- K. 6
- L. 3
- M. 0
- N. -3
- O. -6

answer

Q18

An equal number of desks and bookcases are to be placed along a library wall that is 15 meters long. Each desk is 2 meters long, and each bookshelf is 1.5 meters long. If the maximum possible number of desks and bookcases are to be placed along the wall, then the space along the wall that is left over will be how many meters long?

- A.0.5
- B.1
- C.1.5
- D.2
- E.3

Answer

Q19

Square ABCD is inscribed in circle O. What is the area of square region ABCD?

- (1) The area of circular region O is 64π .
- (2) The circumference of circle O is 16π .

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Answer

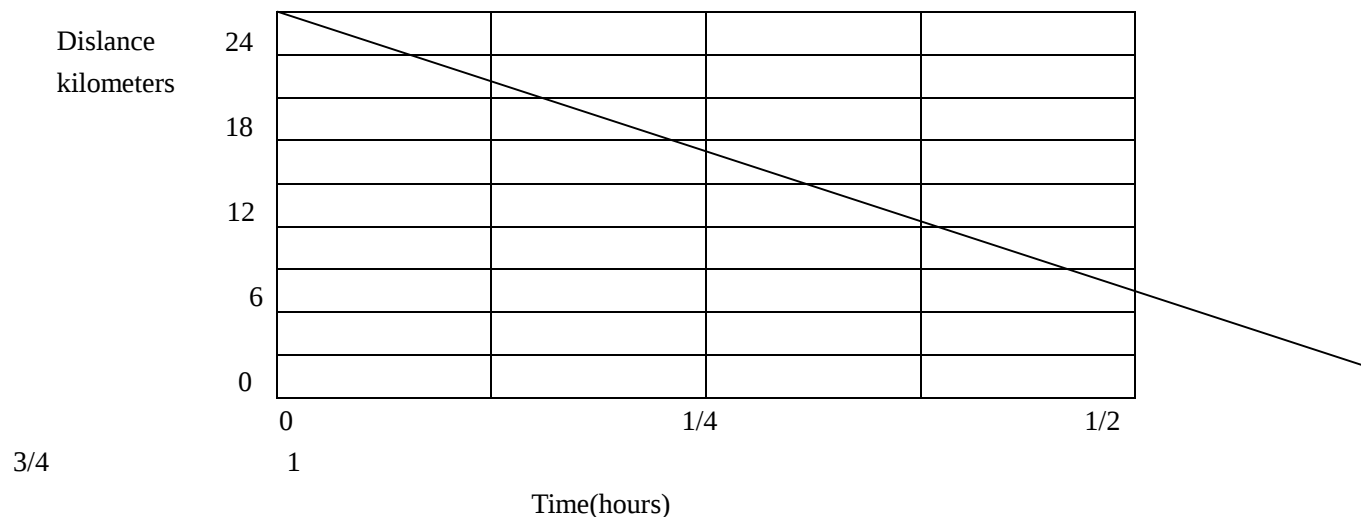
Q20.

Based on this year's costs, an orchard grower budgets P dollars for planting N new trees next year. If the average cost of planting each tree were to increase 25 percent from this year's cost, then the greatest number of trees that the orchard grower could plant next year using P dollars would be.

- A. 20% less than N
- B. 25% less than N
- C. equal to N
- D. 20% greater than N
- E. 25% greater than N

answer

Q21.



Reid took 1 hour to cycle from his home to his college. The graph shows Reed's distance from his college during That hour. Reid's average speed for the last 15 minutes Of the hour was how many kifometers per hour greater Than his average speed for the first 45 minutes?

- A. 3
- B. 4
- C. 5
- D. 6
- E. 7

answer

Q22.

which of the following is a value of X
for which $X^{11} - X^3 > 0$

- A. -2
- B. -1
- C. -1/2
- D. 1/2
- E. 1

answer

Q23.

At a fruit stand yesterday, the price of each apple was \$0.10 more than the price of each orange. What was the total revenue from the sale of oranges at the fruit stand yesterday?

- (1) The number of oranges sold at the fruit stand yesterday was 5 more than the number of apples.
- (2) The total revenue from the sale of apples at the fruit stand yesterday was \$15.00

-
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Answer

Q24.

if R, S, and T are numbers on the number line, not necessarily in that order, what is the distance between R and T?

- (1) The distance between R and S is 50.
- (2) The distance between S and T is 41

-
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Answer

Q25.

A farmer produced 750 bushels of a certain crop at a cost of \$20 per bushel. If the farmer sold $\frac{2}{3}$ of the bushels for double their production cost and sold the remaining bushels at 25 percent above their production cost, what was the farmer's gross profit on the sale of the crop?

- A. \$11250
- B. \$13375
- C. \$15000
- D. \$18750
- E. \$26250

answer

Q26.

IS $(X+Y)^3$ an even integer?

- (1) X and Y are integers.
- (2) $XY=9$

-
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answer

Q27.

If M is a positive integer, then M^3 has how many digits?

- (1) M has 3 digits.
(2) M^2 has 5 digits

-
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Answer

Q28.

if the function F is defined by $F(x) = x^2 + 1/x^2$ for all nonzero numbers X , then $F(-1/X) =$

- A. $-1/f(x)$
B. $1/f(x)$
C. $1-f(x)$
D. $-f(x)$
E. $f(x)$

answer

Q29.

if $X > 1$ and $Y > 1$, is $X < Y$?

- (1) $X^2/(XY+X) < 1$
(2) $XY/Y^2 - Y < 1$

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answer

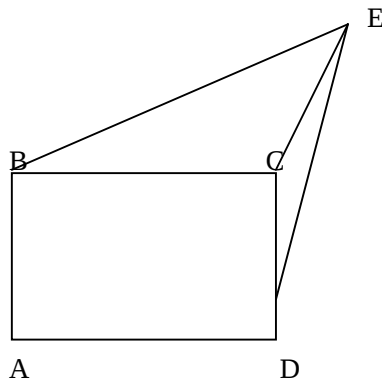
Q30.

Yesterday it took a certain plane 3 hours to fly from City A to City B at an average speed of 400 miles per hour. Today the same plane flew from City A to City B along the same route at an average speed of 450 miles per hour. How many more yesterday than it took today?

- A. 10
- B. 15
- C. 20
- D. 25
- E. 30

answer

Q31.



In the figure, each side of square ABCD has length 1, the length of line segment CE is 1, and the length of line segment BE is equal to the length of line segment DE. What is the area of the triangular region BCE?

- a. $\frac{1}{3}$
- b. $\frac{(2^2-2)}{4}$
- c. $\frac{1}{2}$
- d. $\frac{(2^2-2)}{2}$
- e. $\frac{3}{4}$

answer

Q32.

Last year in a group of 30 businesses, 21 reported a net profit and 15 had investments in foreign markets. How many of the businesses did not report a net profit nor invest in foreign markets last year?

- (1) last year 12 of the 30 businesses reported a net profit and had investments in foreign markets.
- (2) last year 24 of the 30 businesses reported a net profit or invested in foreign markets, or both.

-
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Answer

Q33.

A pump started filling an empty pool with water and continued at a constant rate until the pool was full. At noon the pool was $\frac{1}{3}$ full, and $1\frac{1}{4}$ hours later it was $\frac{3}{4}$ full. What was the total number of hours that it took the pump to fill the pool?

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

Answer

Q34.

If $|M+4| = 2$, what is the value of M ?

- (1) $M < 0$ (2) $M^2 + 8M + 12 = 0$

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answer

Q35.

Linda purchased 3 books at a book fair. What was the median price of the 3 books?

- (1) The average (arithmetic mean) price of the 3 books was \$1.5
(2) The price of one of the 3 books was \$1.5

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answer

Q36.

In a certain quiz that consists of 10 questions, each question after the first is worth 4 points more than the preceding question. If the 10 questions on the quiz are worth a total of 360 points, how many points is the third question worth?

- A. 18
B. 24
C. 26
D. 32

E. 44

Answer

Q37.

$$\begin{array}{r} AB \\ +BA \\ \hline AAC \end{array}$$

In the correctly worked addition problem shown, where the sum of the two-digit positive integers AB and BA is the three-digit integer AAC, and A, B, and C are different digits, what is the units digit of the integer AAC?

- A. 9
- B. 6
- C. 3
- D. 2
- E. 0

Answer

Answer:

BDCCC,EEEEC,EDCEB,ADBDA,CCCEA,CEECEC,DBCEC,CE