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Lines n and p lie in the xy -plane. Is the slope of line n less than the slope of line p ?

(1) Lines n and p intersect at the point $(5,1)$.

(2) The y -intercept of line n is greater than the y -intercept of line p .

- ☐ Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
- ☐ Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
- ☐ BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
- ☐ EACH statement ALONE is sufficient.
- ☒ Statements (1) and (2) TOGETHER are NOT sufficient.

Did it take Pei more than 2 hours to walk a distance of 10 miles along a certain trail? (1 mile = 1.6 kilometers, rounded to the nearest tenth.)

(1) Pei walked this distance at an average rate of less than 6.4 kilometers per hour.

(2) On average, it took Pei more than 9 minutes per kilometer to walk this distance.

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Beth's bank charges a service fee on a regular checking account for each month in which the balance on the account falls below \$100 at any time during the month. Did the bank charge a service fee on Beth's regular checking account last month?

(1) During last month, a total of \$1,000 was withdrawn from Beth's regular checking account.

(2) At the beginning of last month, Beth's regular checking account balance was \$500.

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If x is a positive integer, what is the least common multiple of x , 6, and 9 ?

(1) The least common multiple of x and 6 is 30.

(2) The least common multiple of x and 9 is 45.

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All of the stocks on the over-the-counter market are designated by either a 4-letter or a 5-letter code that is created by using the 26 letters of the alphabet. Which of the following gives the maximum number of different stocks that can be designated with these codes?

- ☒ $2(26^5)$
- ☐ $26(26^4)$
- ☐ $27(26^4)$
- ☐ $26(26^5)$
- ☐ $27(26^5)$

A company has two types of machines, type R and type S. Operating at a constant rate, a machine of type R does a certain job in 36 hours and a machine of type S does the same job in 18 hours. If the company used the same number of each type of machine to do the job in 2 hours, how many machines of type R were used?

- ☐ 3
- ☐ 4
- ☐ 6
- ☒ 9
- ☐ 12

At a two-day seminar, 90 percent of those registered attended the seminar on the first day. What percent of those registered did not attend the seminar on either day?

(1) A total of 1,000 people registered for the two-day seminar.

(2) Of those registered, 80 percent attended the seminar on the second day.

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If $5^{21} \times 4^{11} = 2 \times 10^n$ what is the value of n ?

- ☐ 11
- ☐ 21
- ☐ 22
- ☒ 23
- ☐ 32

Circular gears P and Q start rotating at the same time at constant speeds. Gear P makes 10 revolutions per minute, and gear Q makes 40 revolutions per minute. How many seconds after the gears start rotating will gear Q have made exactly 6 more revolutions than gear P ?

- ☐ 6
- ☐ 8
- ☐ 10
- ☒ 12
- ☐ 15

For which of the following functions is $f(a + b) = f(a) + f(b)$ for all positive numbers a and b ?

- ☐ $f(x) = x^2$
- ☐ $f(x) = x + 1$
- ☒ $f(x) = \sqrt{x}$
- ☐ $f(x) = \frac{2}{x}$
- ☐ $f(x) = -3x$

Are at least 10 percent of the people in Country X who are 65 years old or older employed?

(1) In Country X, 11.3 percent of the population is 65 years old or older.

(2) In Country X, of the population 65 years old or older, 20 percent of the men and 10 percent of the women are employed.

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At a certain pet shop, $\frac{1}{3}$ of the pets are dogs and $\frac{1}{5}$ of the pets are birds. How many of the pets are dogs?

(1) There are 30 birds at the pet shop.

(2) There are 20 more dogs than birds at the pet shop.

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The value of $\frac{10^8 - 10^2}{10^7 - 10^3}$ is closest to which of the following?

- ☐ 1
- ☒ 10
- ☐ 10^2
- ☐ 10^3
- ☐ 10^4

For all positive integers m , $\boxed{m} = 3m$ when m is odd and $\boxed{m} = \frac{1}{2}m$ when m is even. Which of the following is equivalent to $\boxed{9} \times \boxed{6}$?

- ☒ $\boxed{81}$
- ☐ $\boxed{54}$
- ☐ $\boxed{36}$
- ☐ $\boxed{27}$
- ☐ $\boxed{18}$

On the number line, the distance between x and y is greater than the distance between x and z . Does z lie between x and y on the number line?

(1) $xyz < 0$

(2) $xy < 0$

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If $xy = 1$, what is the value of $\frac{2^{(x+y)^2}}{2^{(x-y)^2}}$?

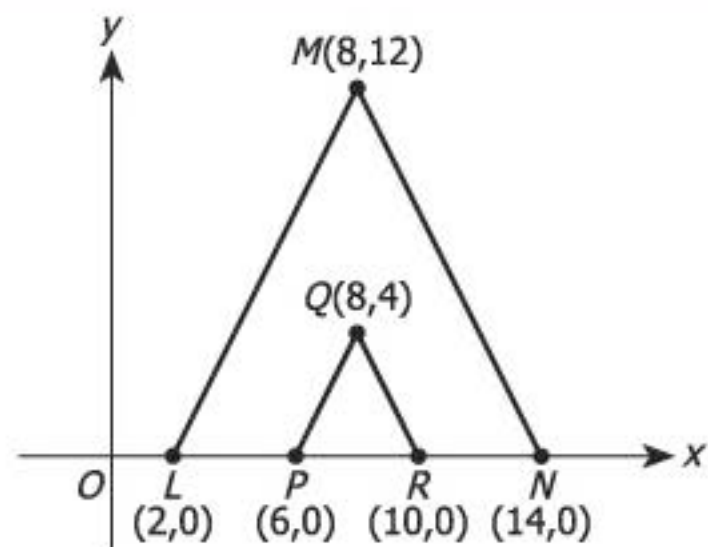
- ☐ 2
- ☒ 4
- ☐ 8
- ☐ 16
- ☐ 32

Six machines, each working at the same constant rate, together can complete a certain job in 12 days. How many additional machines, each working at the same constant rate, will be needed to complete the job in 8 days?

- ☒ 2
- ☐ 3
- ☐ 4
- ☐ 6
- ☐ 8

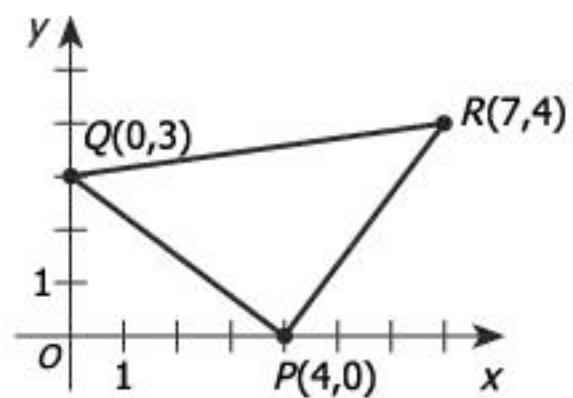
Alice's take-home pay last year was the same each month, and she saved the same fraction of her take-home pay each month. The total amount of money that she had saved at the end of the year was 3 times the amount of that portion of her monthly take-home pay that she did not save. If all the money that she saved last year was from her take-home pay, what fraction of her take-home pay did she save each month?

- ☐ $\frac{1}{2}$
- ☒ $\frac{1}{3}$
- ☐ $\frac{1}{4}$
- ☐ $\frac{1}{5}$
- ☐ $\frac{1}{6}$



In the rectangular coordinate system above, the area of ΔPQR is what fraction of the area of ΔLMN ?

- ☐ $\frac{1}{9}$
- ☐ $\frac{1}{8}$
- ☐ $\frac{1}{6}$
- ☐ $\frac{1}{5}$
- ☒ $\frac{1}{3}$



In the rectangular coordinate system above, the area of triangular region PQR is

- ☐ 12.5
- ☐ 14
- ☐ $10\sqrt{2}$
- ☐ 16
- ☒ 25