GRE Quant School

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KMF Math Sprint Practice - Section 19 Hard

Question: 1

$y=2x+1$, where $x > 0$.

Quantity A	Quantity B
The percent increase in the value of y when the value of x is increased by 10%	10%

- Quantity A is greater.
- Quantity B is greater.
- The two quantities are equal.
- The relationship cannot be determined from the information given.

Question: 2

X is the sum of all the even positive integers less than or equal to 50.

Y is the sum of all the odd positive integers less than or equal to 49.

Quantity A	Quantity B
X-Y	25

- Quantity A is greater.
- Quantity B is greater.
- The two quantities are equal.
- The relationship cannot be determined from the information given.

Question: 3

When working at their respective rates, machine A produces 50 vases per hour and machine B produces 60 vases per hour.

Quantity A	**Quantity B**
The total number of vases machine A produces	The total number of vases machine B produces

- Quantity A is greater.
- Quantity B is greater.
- The two quantities are equal.
- The relationship cannot be determined from the information given.

Question: 4

$$|3r+2|=r+6$$

Quantity A	**Quantity B**
r	0

- Quantity A is greater.
- Quantity B is greater.
- The two quantities are equal.
- The relationship cannot be determined from the information given.

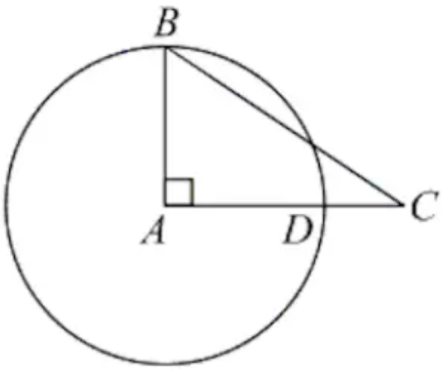
Question: 5

$$x((75+y)+(15-y))=900$$

Quantity A	**Quantity B**
xy	10

- Quantity A is greater.
- Quantity B is greater.
- The two quantities are equal.
- The relationship cannot be determined from the information given.

Question: 6

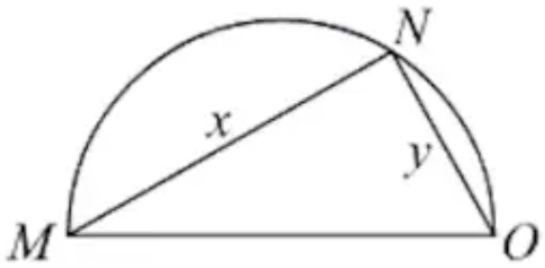


In the figure, point A is the center of the circle and points B and D lies on the circle. The length of DC is one-half of the length of AD.

Quantity A	**Quantity B**
The area of sector ABD	The area of triangle ABC

- Quantity A is greater.
- Quantity B is greater.
- The two quantities are equal.
- The relationship cannot be determined from the information given.

Question: 7



△MNO is inscribed in semicircle MNO with radius r.

Quantity A	**Quantity B**
x^2+y^2	$4r^2$

- ○ Quantity A is greater.
- ○ Quantity B is greater.
- ○ The two quantities are equal.
- ○ The relationship cannot be determined from the information given.

Question: 8

One day in 1997 at a gas station in the United States near the border of Canada, gasoline was selling for $1.20 per gallon (United States dollars). On that day, 1 United States dollar could be exchanged for 1.25 Canadian dollars. If gasoline was being sold at an equivalent rate at a gas station across the border in Canada, which of the following calculations gives an approximate price, in Canadian dollars, for a liter of gasoline at the Canadian gas station that day? (1 gallon is approximately 3.785 liters.)

- ○ $\frac{(1.20)(3.785)}{1.25}$
- ○ $\frac{(1.20)(1.25)}{3.785}$
- ○ $(1.20)(3.785)(1.25)$
- ○ $\frac{(1.20)}{(1.25)(3.785)}$
- ○ $\frac{3.785}{(1.20)(1.25)}$

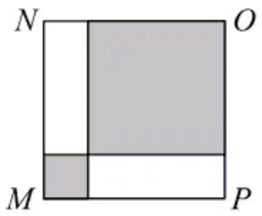
Question: 9

At Least Mushrooms	At Least Onions	At Least Peppers	Mushrooms and Onions	Mushrooms and Peppers	Onions and Peppers
80	100	90	28	23	25

A restaurant made 200 pizzas, some of which has no toppings, while the others had at least one of three toppings-mushrooms, onions, and peppers-as summarized in the table above. No pizza had all three toppings. How many of the pizzas had no toppings?

- 6
- 8
- 10
- 11
- 12

Question: 10

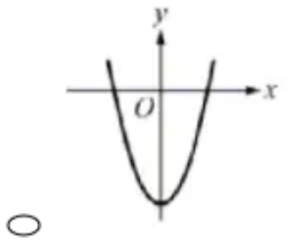


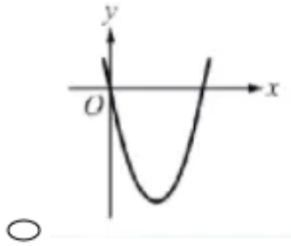
In square MNOP shown, the two shaded square regions have areas in the ratio 9 to 1. If square region MNOP has area 144, what is the area of each of the two unshaded rectangular regions?

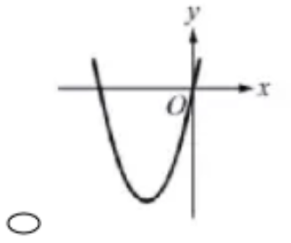
- 9
- 16
- 27
- 36
- 48

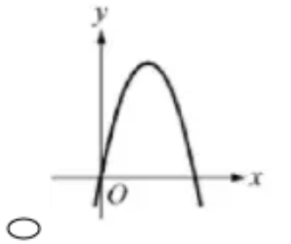
Question: 11

Which of the following could be a portion of the graph of y=$(x+2)^2$-5 in the xy-plane?









Question: 12

k, m, and p are integers.

If k and m are negative integers, which of the following must be negative integers?

Indicate all such integers.

- ☐ $m - p^2$
- ☐ (k-1)(p+1)
- ☐ kmp

Question: 13

If k and n are each positive integers between 12 and 30, then $\frac{5+k}{7+n}$ will be equal to $\frac{5}{7}$ for how many pairs of (k, n)?

- ⬭ Two
- ⬭ Three
- ⬭ Four
- ⬭ Seventeen
- ⬭ Nineteen

Question: 14

Value of Mergers and Acquisitions for Selected Industries in the United States, First Quarter 2002

Industry	First Quarter 2002 Value (in billions*)	Percent Change from First Quarter 2001
Chemical	$2.8	4%
Health care	$4.6	–74%
Media	$7.5	–79%
Nonbank financial	$6.1	–68%
Oil and gas	$8.0	–62%
Paper products	$2.9	–5%
Real estate	$10.5	–16%
Retail	$5.1	71%
Technology	$6.9	–68%
Telecommunications	$3.2	–49%
Transportation	$12.8	84%
Total	$70.4	

* 1 billion = 1,000,000,000

For those industries that experienced a decrease in the value of mergers and acquisitions from the first quarter of 2001 to the first quarter of 2002, what was the range of the values of mergers and acquisitions in the first quarter of 2002?

- $1.4 billion
- $7.3 billion
- $7.6 billion
- $7.7 billion
- $10.0 billion

Question: 15

Value of Mergers and Acquisitions for Selected Industries in the United States, First Quarter 2002

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In the real estate industry, the percent decrease in the value of mergers and acquisitions from the first quarter of 2002 to the first quarter of 2003 was the same as from the first quarter of 2001 to the first quarter of 2002. If this percent decrease in value was repeated again from the first quarter of 2003 to the first quarter of 2004, which of the following represents the value in the first quarter of 2004?

- $(10.5)(0.16)$ billion
- $(10.5)(0.16)^2$ billion
- $(10.5)(1.16)^2$ billion
- $(10.5)(0.84)^2$ billion
- $(10.5)(0.84)$ billion

Question: 16

Value of Mergers and Acquisitions for Selected Industries in the United States, First Quarter 2002

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Total	$70.4	

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Which of the following is closest to the value of mergers and acquisitions for the oil and gas industry in the first quarter of 2001?

- $5 billion
- $10 billion
- $13 billion
- $18 billion
- $21 billion

Question: 17

S is the set of all numbers $(k-n)^2$, where k and n are integers such that $4 \leq k < 7 < n \leq 12$. What is the range of the numbers in S?

Question: 18

A certain spacecraft has 2 separate computer systems, X and Y, each of which functions independently of the other. The probabilities that systems X and Y will function correctly at liftoff are 0.90 and 0.99, respectively. What is the probability that at least one system will function correctly at liftoff?

- 0.891
- 0.945
- 0.955
- 0.999
- 0.9999

Question: 19

If a set S has a total of 6 subsets that consist of 2 members each, then S consists of how many members?

Question: 20

The number of children in a certain family is a prime number less than 10. The number of boys in the family is greater than the number of girls, and the number of boys is a prime number. If at least 1 of the children in the family is a girl, which of the following could be the number of boys in the family?

Indicate all such numbers.

- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7