KMF Math Sprint Practice - Section 22 Medium

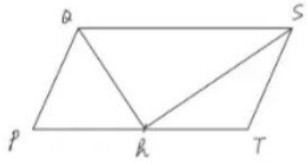
Question: 1

$-4 < x < 2$ and $-2 < x < 4$

Quantity A	Quantity B
$\|x\|$	2

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

Question: 2



PQST is a parallelogram and R is the midpoint of side PT.

Quantity A	Quantity B
The area of triangular region PQR	The area of triangular region RST

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

Question: 3

n is an integer.

Quantity A	Quantity B
$(-1)^n(-1)^{n+2}$	1

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

Question: 4

$$\frac{2}{x} = \frac{y}{2}$$

Quantity A	Quantity B
x	y

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

Question: 5

Terry deposits a total of $400 in two different accounts. One account pays 3 percent annual interest and the other pays 5 percent annual interest. The total yearly interest on these investments is $16.

Quantity A	Quantity B
The amount of money that is invested in the account that pays 3 percent annual interest	The amount of money that is invested in the account that pays 5 percent annual interest

Question: 6

The area of square region S is equal to the area of circular region C.

Quantity A	Quantity B
The length of a diagonal of S	The length of a diameter of C

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

Question: 7

Set S consists of all three-digit positive integers that contain only the digits 1, 2, 3, 4, or 5.

Quantity A	Quantity B
The number of integers in S in which all three digits are different	60

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

Question: 8

For a positive integer n, the remainder is 3 when it is divided by 7, and the remainder is R when it is divided by 4.

Quantity A	Quantity B
R	2

Question: 9

For x=97, which of the following fractions has the least value?

- $\frac{97}{x}$
- $\frac{x}{x+1}$
- $\frac{x}{x-1}$
- $\frac{x+1}{x}$
- $\frac{x-1}{x}$

Question: 10

If the average (arithmetic mean) of three consecutive odd integers is 11, then 7 more than the least of the three integers is

- 16
- 17
- 18
- 19
- 20

Question: 11

If z=$\frac{x}{y}$, w= $\frac{x}{x+y}$, and 0 < x < y, what is w in terms of z?

- z^2
- z+1
- $\frac{1}{z+1}$
- $\frac{z}{z+1}$
- $\frac{z}{z+2}$

Question: 12

If two different numbers are selected at random from the numbers 1, 2, 3, 4, and 5, what is the probability that their product will be odd?

- $\frac{1}{2}$
- $\frac{1}{12}$
- $\frac{1}{20}$
- $\frac{3}{5}$
- $\frac{3}{10}$

Question: 13

Last spring, a gardening store bought 100 trees for $6 each to resell to customers. By the end of the year, 20 of the trees were sold for $30 each, 30 of the trees were sold for $50 each, 40 of the trees were sold for $60 each, and 10 of the trees were damaged and not sold. For the 100 trees, what was the average (arithmetic mean) profit per tree?

$____

Question: 14

Measures Planned to be Used to Offset Rising Energy Cost:

Survey Results for 1,600 Companies

Measure	Percent of Companies
Absorb increased costs	48%
Consolidate debt	15%
Cut research and development	10%
Increase prices	41%
Negotiate raw-material costs	23%
Reduce workforce	18%
Trim advertising and marketing	12%

An analyst estimates that of the companies surveyed that plan to increase prices, 75 percent will actually increase prices. According to the analyst's estimate, what is the number of companies surveyed that plan to increase prices but will not actually increase prices?

- 164
- 262
- 381
- 547
- 640

Question: 15

Measures Planned to be Used to Offset Rising Energy Cost:

Survey Results for 1,600 Companies

Measure	Percent of Companies
Absorb increased costs	48%
Consolidate debt	15%
Cut research and development	10%
Increase prices	41%
Negotiate raw-material costs	23%
Reduce workforce	18%
Trim advertising and marketing	12%

For the seven measures shown, what is the median of the numbers of companies surveyed that plan to use the measures?

- 656
- 548
- 402
- 368
- 288

Question: 16

Measures Planned to be Used to Offset Rising Energy Cost:

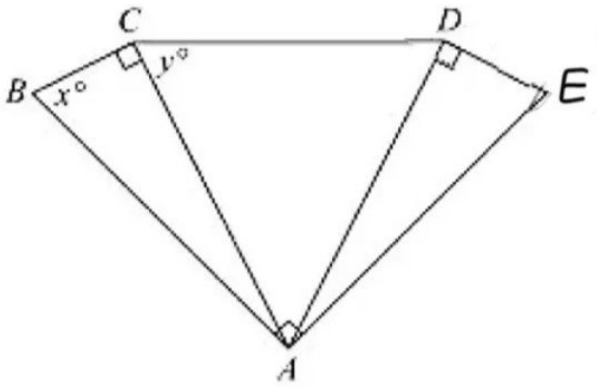
Survey Results for 1,600 Companies

Measure	Percent of Companies
Absorb increased costs	48%
Consolidate debt	15%
Cut research and development	10%
Increase prices	41%
Negotiate raw-material costs	23%
Reduce workforce	18%
Trim advertising and marketing	12%

The number of companies surveyed that plan to trim advertising and marketing is what percent less than the number of companies surveyed that plan to consolidate debt?

- 15%
- 20%
- 25%
- 30%
- 35%

Question: 17



Triangles ABC and AED are congruent, where BC=DE. If y=63, what is the value of x?

x=_____

Question: 18

The first term of an infinite sequence is 4, and each term after the first term is 7 greater than the preceding term. What is the 64th term of the sequence?

- ○ 188
- ○ 431
- ○ 445
- ○ 448
- ○ 452

Question: 19

A wall in a museum is covered by 60 flat rectangular panels. If the dimensions of each panel are 4 feet by 7.5 feet, what is the total area, in square yards, of the panels? (Note: 1 yard=3 feet.)

- ○ 200
- ○ 600
- ○ 1,800
- ○ 5,400
- ○ 16,200

Question: 20

A research report states that the average (arithmetic mean) of 120 measurements was 72.5, the greatest of the 120 measurements was 92.8, and the range of the 120 measurements was 51.6.

The information given above is sufficient to determine the value of which of the following statistics?

Indicate all such statistics.

- ☐ The least of the 120 measurements
- ☐ The median of the 120 measurements
- ☐ The standard deviation of the 120 measurements
- ☐ The sum of the 120 measurements