GRE Quant School

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KMF Math Sprint Practice - Section 9 Hard

Question: 1

Five different families received tax bills at the beginning of the year. Later, the four lowest tax bills were each reduced by $200 while the highest tax bill remained the same.

Quantity A	**Quantity B**
The standard deviation of the original five tax bills	The standard deviation of the resulting five tax bills after the four lowest tax bills were reduced

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

Question: 2

R and T are two different points in the xy-plane. The coordinates of R are (4, 5), and the slope of the line containing R and T is 3.

Quantity A	**Quantity B**
The x-coordinate of T	2

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

Question: 3

List K consists of 100 numbers between 20 and 40, and list M consists of 200 numbers between 30 and 50.

Quantity A	**Quantity B**
The arithmetic mean of the numbers in list K	The arithmetic mean of the numbers in list M

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

Question: 4

$$(3^{8x})(Y^3) = 3^{8x+3}$$

Quantity A	**Quantity B**
Y^2	9

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

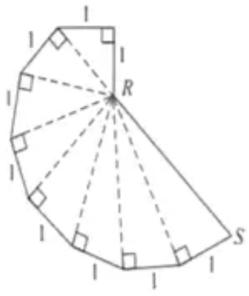
Question: 5

$x > 0$

Quantity A	**Quantity B**
$\frac{1}{9}$ of x	11% of x

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

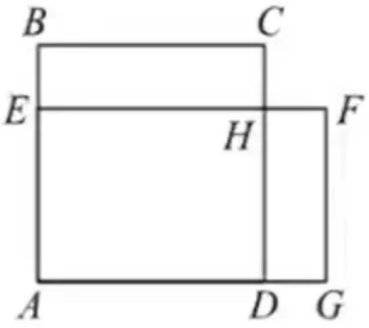
Question: 6



Quantity A	**Quantity B**
RS	3

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

Question: 7



ABCD is a square, AEFG is a rectangle, and BE=DG.

Quantity A	**Quantity B**
The area of square ABCD	The area of rectangle AEFG

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

Question: 8

Last Saturday a cyclist started a 40-kilometer trip at 9 o`clock in the morning and rode at an average speed of 20 kilometers per hour for 45 minutes. The cyclist stopped to rest for x minutes and then rode at an average speed of 30 kilometers per hour until the trip was completed at 11 o`clock in the morning. What is the value of x?

- ○ 35
- ○ 25
- ○ 20
- ○ 15
- ○ 10

Question: 9

$$\begin{array}{r} YX7 \\ +\ 6Y \\ \hline Y7X \end{array}$$

In the sum above, if X and Y each denote one of the digits from 0 to 9, inclusive, then X=?

- ⬭ 9
- ⬭ 6
- ⬭ 3
- ⬭ 1
- ⬭ 0

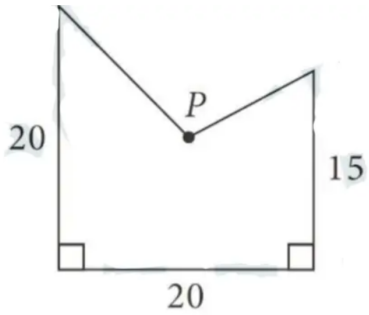
Question: 10

Carolyn took out a one-year loan for $15,000 at 8 percent simple annual interest. She repaid the total amount, including the interest, by making 12 equal monthly payments on the last day of each month beginning in January. At the beginning of which of the following months did Carolyn have less than $10,000 of the total amount left to the repaid?

Indicate all such months.

- ☐ April
- ☐ May
- ☐ June
- ☐ July
- ☐ August
- ☐ September

Question: 11



The figure above represents the surface of a wall with an irregular shape, where all measurements are in meters and point P is 10 meters from the bottom edge and 10 meters from the left edge. The surface is to be painted, and one bucket of paint will cover 170 square meters of the surface. If the bucket of paint will cover the part of the surface from the left edge to a vertical line that is x meters from the left edge, which of the following is true?

- $8 < x < 9$
- $9 < x < 10$
- $10 < x < 11$
- $11 < x < 12$
- $12 < x < 13$

Question: 12

If set S consists of the squares of the integers from -5 to 5, inclusive, how many elements are in set S?

- 5
- 6
- 10
- 11
- 25

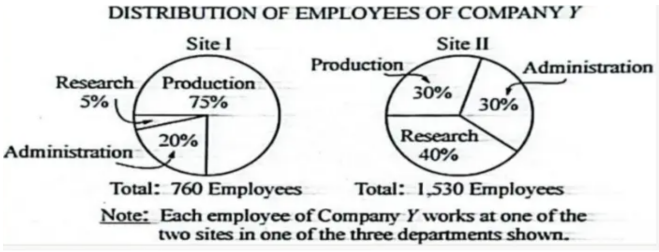
Question: 13

If the ones digit of 7^n is 9, then the value of n could be?

Indicate <u>all</u> such numbers.

- ☐ 101
- ☐ 102
- ☐ 103
- ☐ 104
- ☐ 105
- ☐ 106
- ☐ 108

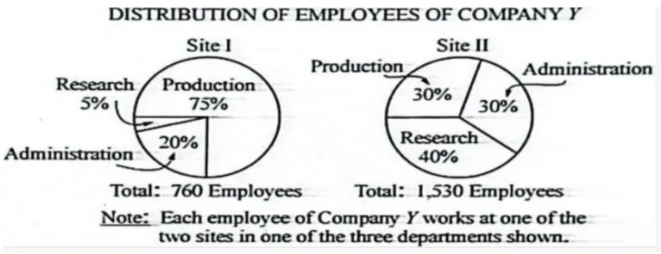
Question: 14



If 250 employees in administration were transferred from Site II to Site I and no other changes in employment occurred, approximately what percent of the employees at Site I would work in administration?

- ○ 26%
- ○ 33%
- ○ 40%
- ○ 49%
- ○ 53%

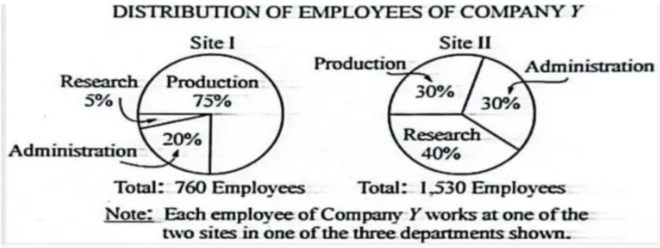
Question: 15



The ratio of the number of production workers at Site I to the number of production workers at Site II is mostly equal to

- 2 to 5
- 4 to 5
- 5 to 2
- 5 to 3
- 5 to 4

Question: 16



At Site II, if the average (arithmetic mean) salaries in production, administration, and research are x, y, and z dollars, respectively, what is the average salary, in dollars, of all employees at Site II?

- $\frac{(x+y+z)}{3}$
- 0.3x+0.3y+0.4z
- $\frac{(0.3x+0.3y+0.4z)}{3}$
- $\frac{(0.3x+0.3y+0.4z)}{1530}$
- (0.3)(1530)x+(0.3)(1530)y+(0.4)(1530)z

Question: 17

The operation is defined by x✷y=$\frac{x^2}{y}+\frac{x}{y}$ for all numbers x and y, where y≠0. What is the value of (9✷ (-9))+((-9) ✷9)?

Question: 18

Three printers, X_1, X_2 and X_3, work only at their respective constant rates. Working together,X_1, X_2 and X_3 can complete a certain job in 9 hours; working together, X_2 and X_3 can complete the same job in 12 hours. Working alone, how many hours will it take X_1 to complete the job?

- 12
- 15
- 18
- 24
- 36

Question: 19

If the probability that event R will occur is 0.75, and the probability that event M will occur is 0.58, which of the following is equal to the maximum probability that both events will occur?

- 0.58
- 0.75
- 0.58+0.75
- $\frac{(0.58+0.75)}{2}$
- 0.58+0.75-(0.58)(0.75)

Question: 20

Let n be a nonnegative integer such that when 6n is divided by 75, the remainder is 30. Which of the following is a list of all possible remainders when 7n is divided by 75?

- 5, 35
- 10, 55
- 35, 60
- 5, 30, 55
- 10, 35, 60