GRE Quant School

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KMF Math Sprint Practice - Section 11 Hard

Question: 1

n is an integer such that $111 \leq n \leq 114$.

Quantity A	Quantity B
The remainder when n is divided by 31	16

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

Question: 2

Triangular region T has sides of lengths 13, 13 and 10.

Quantity A	Quantity B
The area of region T	65

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

Question: 3

A certain truck takes 10 trips to transport 2,000 cartons from warehouse A to warehouse B. For each trip except the 10th trip, the truck is loaded to its full carrying capacity of x cartons. On the 10th trip, the truck is loaded with the remaining cartons.

Quantity A	**Quantity B**
x	210

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

Question: 4

$$x^{-1}y^{-1}>0$$

Quantity A	**Quantity B**
$\frac{x^{-1}}{y^{-1}}$	$\frac{x}{y}$

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

Question: 5

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: 6

x and y are positive integers, and $x=10y+2$

Quantity A	**Quantity B**
The value of the tens digit of x	The value of the units digit of y

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

Question: 7

The circumference of a certain circular region is y.

Quantity A	Quantity B
The area of the circular region	$\frac{y^2}{4}$

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

Question: 8

A total of $48,000 was invested for one month in a new money market account that paid simple annual interest at the rate of r percent. If the investment earned $240 in interest for the month, what is the value of r?

- 5.0
- 5.5
- 6.0
- 6.5
- 7.0

Question: 9

The function f is defined by f(n)= $\frac{2n-1}{2n+1}$ for all positive integers n. What is the least positive integer m for which the product (f(1))(f(2)).....(f(m)) is less than or equal to $\frac{1}{15}$?

- 6
- 7
- 8
- 14
- 15

Question: 10

For each of the years 1993 and 1994, the population of City M increased by 20 percent during the year. If the population was 280,000 on December 31, 1994, approximately what was the population on January 1, 1993?

- 235,000
- 210,000
- 195,000
- 180,000
- 165,000

Question: 11

In the xy-plane, line segment RS is a side of a square. The coordinates of R are (2, 10) and the coordinates of the midpoint of RS are (7, 12). Which of the following CANNOT be the coordinates of a vertex of the square?

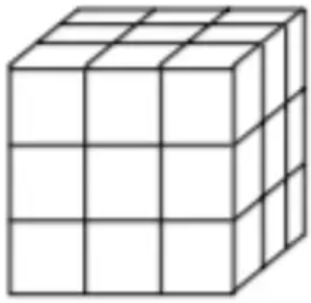
- (6, 0)
- (8, 4)
- (8, 24)
- (12, 14)
- (16, 4)

Question: 12

Which of the following is the best estimate of $\frac{(16.8)(10^3)}{(0.51)(10^{-11})}$?

- $(3.3)(10^{15})$
- $(3.3)(10^{14})$
- $(3.3)(10^{10})$
- $(3.3)(10^{9})$
- $(3.3)(10^{8})$

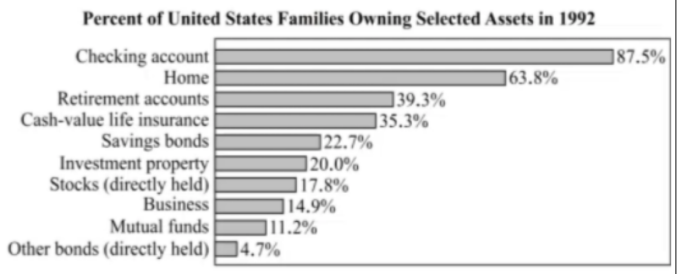
Question: 13



If 20 red cubes and 7 white cubes, all of equal size, are fitted together to form one large cube, as shown above, what is the greatest fraction of the surface area of the large cube that could be red?

- $\frac{8}{9}$
- $\frac{47}{54}$
- $\frac{23}{27}$
- $\frac{5}{6}$
- $\frac{20}{27}$

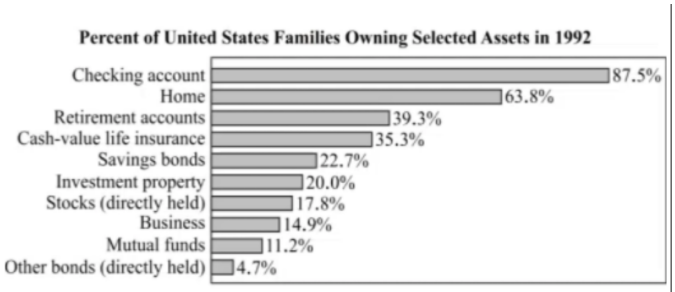
Question: 14



From 1989 to 1992, there was a 10 percent increase in the percent of families that owned directly held stocks. Which of the following is closest to the percent of families who owned directly held stocks in 1989?

- 1.8%
- 15.0%
- 15.8%
- 16.2%
- 19.6%

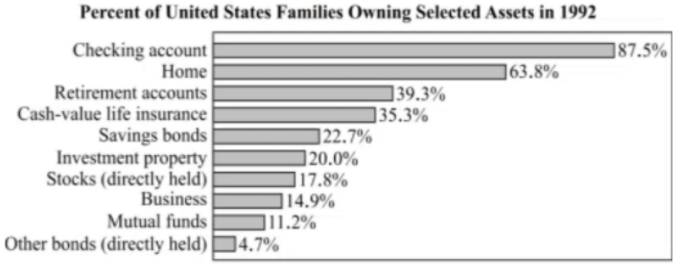
Question: 15



If 38.7 percent of the families who owned a home owed money on a home mortgage loan or home equity loan, or both, approximately what percent of United States families owned homes free of both home mortgage and home equity loans?

- 65%
- 40%
- 30%
- 25%
- 18%

Question: 16



In 1992, if 7.9 percent of the families in the survey owned both savings bonds and mutual funds, what percent owned neither savings bonds nor mutual funds?

- 41.8%
- 58.2%
- 74.0%
- 78.3%
- 92.1%

Question: 17

In a certain sequence of numbers, the 1^{st} term is equal to 1 and each term after the 1^{st} term is equal to 12 times the square of the preceding term. If the 5^{st} term of the sequence is equal to 12^{n}, what is the value of n?

Question: 18

Larry and Tony work for different companies. Larry`s salary is the $90^{th}$ percentile of the salaries in his company, and Tony`s salary is the 70^{th} percentile of the salaries in his company.

Which of the following statements individually provide(s) sufficient additional information to conclude that Larry`s salary is higher than Tony`s salary?

Indicate all such statements.

- ☐ The average (arithmetic mean) salary in Larry`s company is higher than the average salary in Tony`s company
- ☐ The median salary in Larry`s company is equal to the median salary in Tony`s company
- ☐ The 80^{th} percentile in Larry`s company is higher than the $70^{th}$ percentile salary in Tony`s company

Question: 19

Three numbers are to be selected at random and without replacement from the five numbers 4, 5, 7, 8 and 11. What is the probability that the three numbers selected could be the lengths of the sides of a triangle?

- ○ $\frac{1}{5}$
- ○ $\frac{2}{5}$
- ○ $\frac{3}{5}$
- ○ $\frac{4}{5}$
- ○ 1

Question: 20

20 boys and 40 girls are in Group A, while at least 7 boys, together with some girls are in Group B. To choose one person from each of the group, the probability that both are boys is no greater than $\frac{1}{15}$. Which of the following statements must be true?
Indicate all such statements.

- ☐ The number of people in group B is greater than 34.
- ☐ The number of girls in group B is greater than 32.
- ☐ The number of girl in group B is less than 34.