

QUESTION 1

$$A = f(3) \text{ where } f(x) = x^2 + 3x^5 - 90$$

$$B = g(5) \text{ where } g(x) = 9x^3 - 8x$$

$$C = h(6) \text{ where } h(x) = 2x^2 + 6x$$

Find $A + B + C$

QUESTION 2

Statements shown below are either true or false. Add the values pertaining to the statements which are TRUE.

(8) $5!$ is 120

(-2) The Geometric Mean of 12 and 7 is equal to $\sqrt{84}$

(-8) The hypotenuse of a right triangle with legs 9 and 8 is equal to $6\sqrt{2}$

(3) The arithmetic mean of 20 and 30 is 20

(-4) π is an integer and an irrational number

QUESTION 3

Mr. Cullen finds an odd looking bag one day containing 120 marbles: 10 of them are pink, 50 are blue, 30 are red, 15 are white, 5 are yellow, and 10 are black.

A = The probability of drawing a yellow marble

B = The probability of drawing a pink marble

C = The probability of drawing a white marble

D = The probability of drawing a green marble

Find $(A + B + C) \times D$

QUESTION 4

A = Distance between $(4, 8)$ and $(10, 16)$

B = Distance between $(-5, 9)$ and $(-9, 6)$

C = Distance between $(0, 0)$ and $(6, 8)$

D = Distance between $(-8, -52)$ and $(-3, -8)$

Find $A + B - D + C$

QUESTION 5

A = Change 237 from base 10 to base 2

B = Change 347 from base 10 to base 2

Find the sum of the digits of A and B .

QUESTION 6

Siddarth can paint half of a house in two hours and Jenny can paint a quarter of the house in 1.5 hours. Working together, it will take them A hours to paint the whole house.

Aditya and Stephen are asked to fill up 10 buckets with ice for the ALS Ice Bucket Challenge. Aditya can fill up the buckets in 1 hour and Stephen can fill the buckets in 30 minutes. It will take them B hours to fill up the buckets.

What is $A \times B$?

QUESTION 7

Aditya is trying to figure out how much money he will earn after a year when he deposits money in different banks. He will deposit \$100 in bank A, which has 15% annual interest. He will deposit \$125 in bank B, which has 12% annual interest. He will deposit \$200 in bank C, which has 20% interest, compounded every 6 months. Finally, he will deposit \$2014 dollars in bank D, which has 10% interest annually.

How much money will he have after 1 year?

QUESTION 8

Matthew is currently going to golf practice and is traveling on the line $8x - 4y = 20$. Pranav, who is going to the T-Mobile store to buy his third Iphone is traveling on the path $3x + 9y = 27$

A = Slope of Matthew's path

B = Slope of the line perpendicular to Pranav's path

C = The y coordinate of the y-intercept of Pranav's path

D = The sum of the x and y coordinates of the intersection of Pranav and Matthew's path

Find $\frac{A + D}{B + C}$

QUESTION 9

$$A = XIV$$

$$B = XX$$

$$C = LXIII$$

$$D = XCI$$

Find $A + B + C + D$

QUESTION 10

Let A be the greatest common factor of 56 and 32

Let B be the number of prime numbers between 1 and 100

Let C be the slope of the line $128x - 32y = 908$

Let D be the sum of the first 10 prime numbers

Find $(D + B) - (C - A)$

QUESTION 11

$$13 + 9A = 85$$

$$89 - 7B = 5$$

$$12 + 3C - 108 = 0$$

$$90 - 8D + 20 = -30$$

Find $(A - C - D) \times B$.

QUESTION 12

Below are the number of pencils each student has:

Student	# of Pencils
Aditya	22
Siddarth	10
Rohith	12
Jenny	94
Abhinav	32

Let:

A = the median of the number of pencils each student has

B = the mean number of pencils each student has

C = the range of the number of pencils each student has

D = the number of pencils required to increase the average number of pencils each student has by 5

Find $A + B + C + D$.

QUESTION 13

$$A = 3^5$$

$$B = 7^0$$

$$C = 1^{899}$$

$$D = 8^3$$

Find $(D + B) - (C + A)$

QUESTION 14

David Villa and Zlatan Ibrahimovic one day got into a heated debate on the subject of the Best Striker in the World. They don't trust anyone so they resolved their argument mathematically. Diego Maradona, arguably the world's second best player in futbol gave them a problem. The first one to solve the problem correctly would be awarded the prestigious title of "The Best Striker Alive". The problem was to find the TWO solutions to this equation: $x^2 - 6x + 9 = 0$

Zlatan Ibrahimovic answered: $x = 3; x = 3$

David Villa answered: $x = -3; x = -3$

Find the person who answered the problem correctly and then take the number of letters in his full name and add it to both the x and y coordinates of the midpoint between $(2, 6)$ and $(6, 8)$. Answer should be in coordinate pair form.