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Math Questions

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1- solve the following equation $||x|-3|=2$

2- what is the value of x in the following equation:
$4^{2x+1} = 32$

3- find the value of "x" in the following equation 3x-5y= -1/3
when y/-4 = -2

4- In the following equation: $3y^3 - 1 = k$ find "k" that makes "y" an integer ?

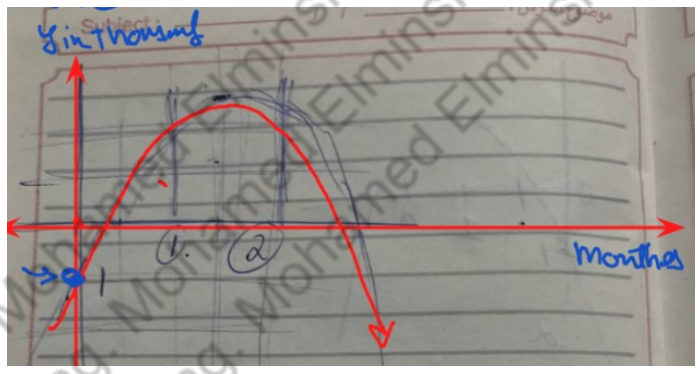
5- Hamda traveled at speed 70 Km/h for 30 min, same distance as he traveled with speed 90 Km/h for x min.
What is the difference in time between the first speed and the second speed?

6- $x^2 + mx = 8$ has only one solution, where "m" = $a\sqrt{b}$, and $0<a<b$, What is the value of a+b?

7-

x	-4	0	3	5
G(x)	5	4	-4	10

In the previous table some values of function G is shown,
another function $f(x)= -3x^2 + 2x + 1$,
What is the value of, $\mathbf{|F(G(G(-4)))| = ?}$



The following graph, related to questions 8,9,10 , shows a company's capital ,where x-axis represent months starting from February and y-axis represent money in thousands of dollars:

8- What was the investment?

a) 1000$
b) 1200$
c) 3000$
d) Can't be determined

9- When was the maximum profit?

a) February to March
b) March to April
c) April to May
d) May and April

10- What is the equation of the function represented in the graph?

a) x^2+3x+1
b) $-x^2-3x-1$
c) $-x^2+3x$

11- The triangle shown above is right at M, If sin(H) = 5/13
What is Tan(N) ?

a) 12/13
b) 5/12
c) 12/5
d) 7/5

12- 125 apples weigh 21.25 Kg total. If each kg costs 3$, assuming all apples are equal in weight, How much does each apple costs?

13- $y=3x^3+2x+1$, $y=2x+a$ both intersect at one integer point $(70 \leq a \leq 90)$ what is the value of a?

a)74
b)77
c)80
d)85

14-A spinner has 4 sections (-1,1,1,2) and a fair dice is thrown.
What is the probability to get a sum of more than 4?

15-What is the probability to get a prime number knowing that it is a sum of 4?

16-What are the equivalent forms of $3x^2 - 8x + 1 = 0$?

I $3(x - \frac{4}{3})^2 = \frac{13}{3}$

II $x - \frac{4}{3} = \pm\frac{\sqrt{13}}{3}$

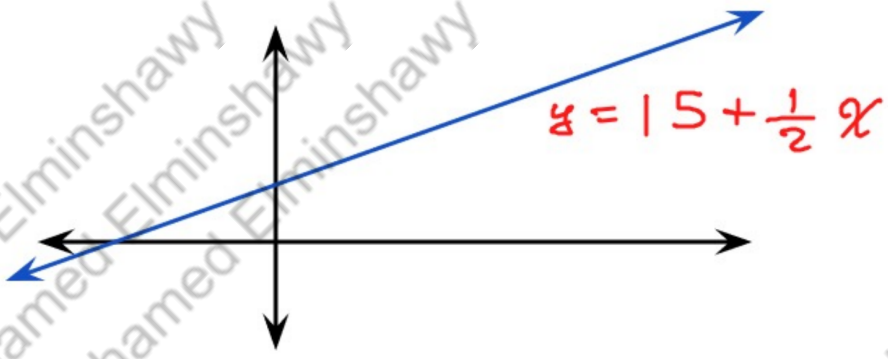
III $3(x - \frac{4}{3})^2 = \frac{13}{4}$

a) I only
b) II only
c) I and II
d) I , II and III

17- What is the slope of the points (2, −5) and (4, −5)?

a) Zero
b) Undefined
c) Vertical
d) positive integer

18-
What is the sum of the integer coordinates of the line Y= 15+0.5x?



Sum of integer co-ordinates $-2 < x < 2$

19- There are two boxes, the first box contains: 2 green balls and 6 white balls, and the second box contains: 3 red balls and 5 green balls, what is the probability of choosing one of the boxes then choosing a red ball.

20-

Before		After
9	**1**	1 8
6 5 5 4 0	**2**	2 3 5 8 9
9 8 6 2 1 0	**3**	0 0 2 2 2 5 9
8 8 7 5 5 2 2 0	**4**	0 3 4 5 7 7
8 6 6 5 5 4 2	**5**	0 1 1 3 6
8 3 2 2 1	**6**	2 4 5 7
1	**7**	3

Key to reading the speeds

Before: 9|1= 19 After: 1|1=11

In this stem and leaf table, Find: the median of "after"

21- In the following two functions:

$f(x)= x^2-2x-2$

$g(x)= -2x^2+x+1$

When will $f(x)>g(x)$?

23- What is the greatest solution of the following function:

$$-x^4 - 2x^2 - 1 = 0$$