est December 2023

25 Math Questions

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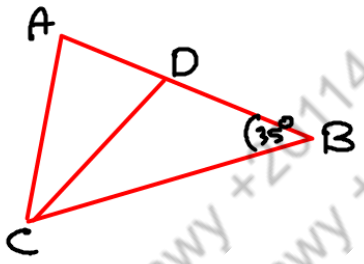
1-



$m\angle BCD = \frac{2}{5} m\angle BCA$, $m\angle BAC= \frac{7}{5} m\angle ABC$

Find $m\angle ACD$:

2- $Y= \frac{2}{x+4} +1$

In the equation above find the sum of Horizontal and vertical asymptote.

3- $\frac{2x}{x^2+3x+2} + \frac{1}{x+1} + \frac{3x-2}{x+2}$

Simplify the expression above

4- In a television contest, a person is asked a question if he/she answers correctly. He/she can pick a gift from 24 gifts numbered from 3 respectively in which only one of the contains a car.
If Ahmed answered correctly, What is the probability of him winning a car?

5- There are 6 triangle plain chocolate , 2 rectangular looped chocolate, and 7 dark chocolates.
What is the chance of getting looped chocolate?

6- In a box, there are 12 red balls, 10 blue balls.
Find the probability of picking two red balls with no replacement?

7-

Date		
January	------	1400$
1, February	a% investement ratio	b
3, February	Withdraw 3$	1413.8$
1, March	a% investement ratio	C
3, March	Withdraw 3$	D

Jack invested 1400 in a bank and gets a% each month.

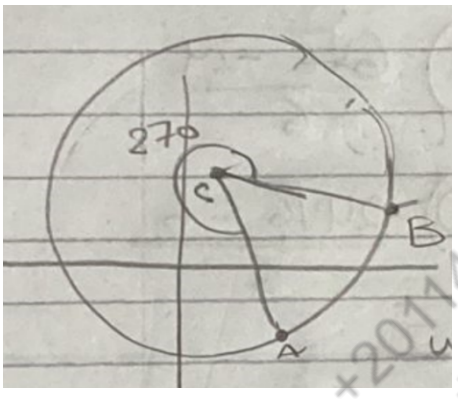
1- Find: [a,b,c,d]
2- He withdrew 700$, How much is left in the bank account?

8- Which of the following equations has a sum of roots equal to -8 and product of roots equal to 15.

(A) $x^2+15x+8$
(B) $x^2-15x+8$
(C) $x^2+8x-15$
(D) $x^2+8x+15$

9- In a pentagon the ratio between its angles is 2:3:3:5:7 , find the measure of the angle with the smallest ratio ?

10-



In the circle shown above, point C coordinates are (1,2) and point B coordinates are (6,1).
Find the area of the minor sector AB ?

11- $\sin(\theta)=\frac{1}{3}$, Find $\cos(\theta)$?

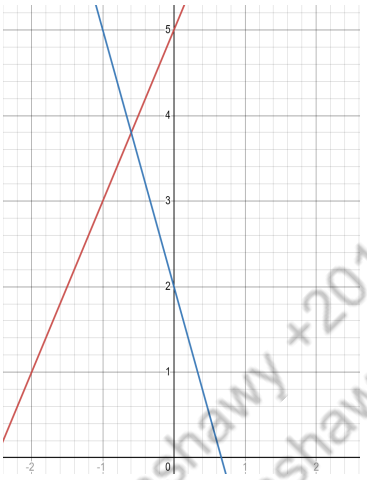
12- $|3x-3|=3$

In the equation shown find the greatest positive possible value of x?

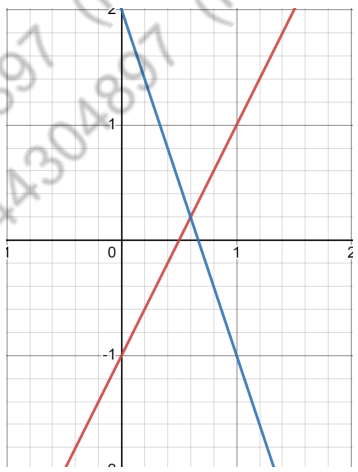
(A) 0
(B) 1
(C) 2
(D) 3

13- $f(x)= 2x+5$, $g(x)= -3x+2$. Find the correct graph for these equations ?

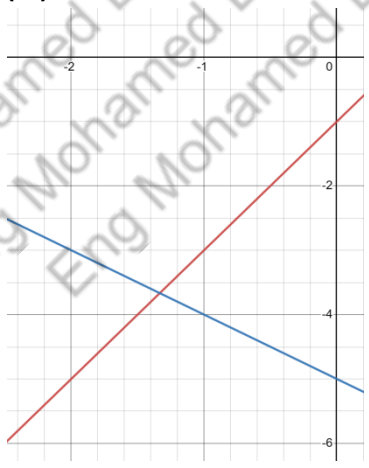
(A)



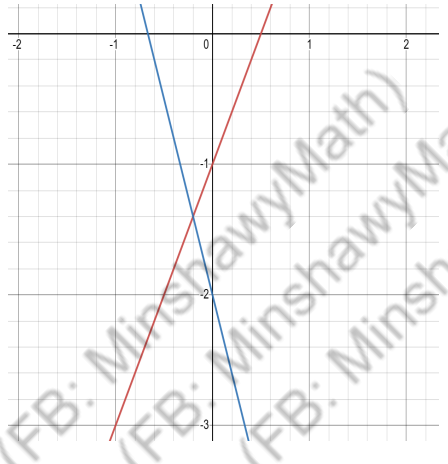
(B)



(C)



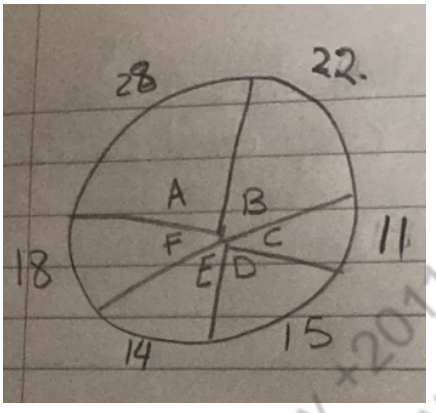
(D)



14- $\sqrt{x-4} = x$, What is the value of x ?

(A) {2}
(B) {6}
(C) {2,6}
(D) No solution

15-



What is the ratio of A:B ?

(A) $\frac{1}{5}$
(B) $\frac{2}{3}$
(C) $\frac{11}{14}$
(D) $\frac{5}{6}$

What is the percentage of E and D ?

(A) 26.9%
(B) 28%
(C) 31.6%
(D) 32.9%

17-

$3x^2+x=3a$

$6x+z=2$

In the system of equations shown above find a in terms of z ?

18- $25^{3x}=125^{3x-4}$

In this equation, Find the value of x ?

19- $S=\frac{F_t}{M}+\frac{F}{B}$

Find F in terms of S,M,B, and F_t

20- In the following system of equations, find the value of y ?

2x+5=6
6x+15=y

21- In country x only 21 year-old students or older are allowed to vote.
For each 2 students more than or equal to 21 years old, there are 5 students less then 21 years old.
Total number of students is 952.

Find the number of students who are allowed to vote ?

22- x varies inversely as y, when x=2 y=9.

Find y when 3x=7 ?

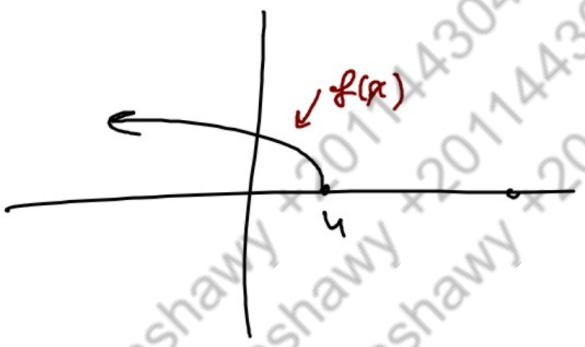
23-

$5x+2y=10$
$3x-y=5$

In the system of equations shown above, What is the 1st step to eliminate y ?

(A) Multiply the 1st equation by 3
(B) Multiply the 2nd equation by 2
(C) Multiply the 2nd equation by -2
(D) Multiply the 1st equation by $\frac{-1}{2}$

24-



g(x) = f(x-4)

What is the value of x to make f(x)=0

(A) 4
(B) 3
(C) 0
(D) 1

25- Hussein bought 4 mugs and 5 spoons for 675$, and Ahmed bought 5 Mugs and 6 spoons for 750$.

What is the cost for 3 Mugs and 1 spoon ?