

# EST HS January 2026

## Math Questions

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- 1) If Yassin writes 250 words in 5 minutes. How many words will he write in 10 minutes if he will take a 40 sec break every 2 minutes?
- a) 400 Words
  - b) 350 Words
  - c) 380 Words
  - d) 250 Words

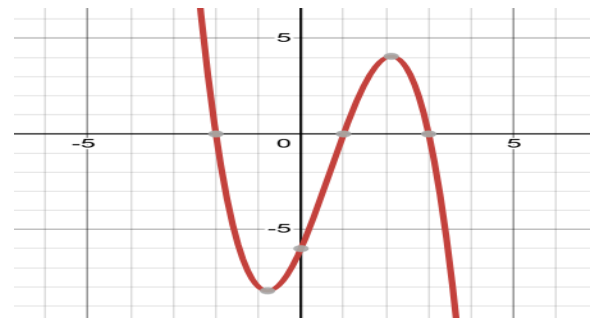
2) If  $\frac{16^{2x+3} \cdot 8^{3x+5}}{4^{x-3}} = 2^{3x+5}$

what is the value of  $3x + 7$ ?

- a) 3
  - b) 1
  - c) 4
  - d) -1
- 3) If the length and the width are 35 and 10. We add 7 to the width, how much should we add to the length to obtain the same ratio?
- a) 3.5
  - b) 4
  - c) 4.5
  - d) 5

- 4) What is the interquartile range of the following data set? 3,4,6,7,5,8,12
- a) 5
  - b) 7
  - c) 9
  - d) 4

- 5) What is the equation of this graph ?



- a)  $y = (x - 2)(x - 1)(x - 2)$
- b)  $y = -(x - 3)(x - 1)(x + 2)$
- c)  $y = -(x - 4)(x - 1)(x - 2)$
- d)  $y = (x - 5)(x - 1)(x - 2)$

6) What is axis of symmetry of the following equation:

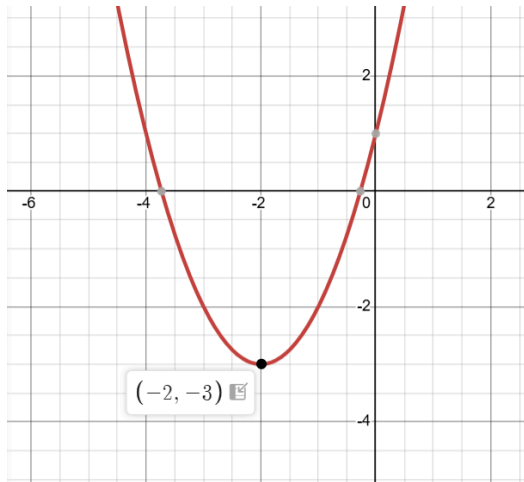
$$y = 2x^2 - 6x + 7$$

- a)  $x = \frac{1}{2}$
- b)  $x = \frac{3}{2}$
- c)  $y = \frac{3}{2}$
- d)  $y = \frac{1}{2}$

8) If  $h = \frac{v^2 x}{g}$ , what is the value of v?

- a)  $v = \frac{h^3 x}{g}$
- b)  $v = \sqrt{\frac{h x}{g}}$
- c)  $v = \frac{h^2 x}{g^2}$
- d)  $v = \sqrt{\frac{h x}{g^2}}$

7) Which of the following is the equation for this graph:



- a)  $y = (x - 2)^2 + 3$
- b)  $y = (x + 2)^2 - 3$
- c)  $y = (x + 2)^2 + 3$
- d)  $y = (x - 3)^2 + 2$

9) If mohsen draws a shape randomly, what is the probability of it being red?

	Red	Blue	Yellow
square	3	2	1
rectangle	5	3	4

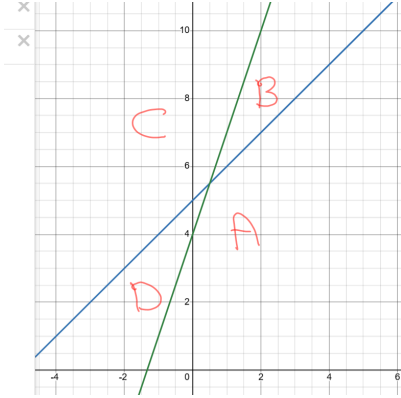
- a)  $\frac{1}{2}$
- b)  $\frac{4}{9}$
- c)  $\frac{5}{11}$
- d)  $\frac{3}{8}$

10) For this system of inequalities,

$$y - x - 2 > 3$$

$$-y + 3x > -4$$

Which area have the solution set form that system:



- a) A
- b) B
- c) C
- d) D

Use this information to solve questions 11 and 12:

$g(x)$  is a linear function.

$x$	$g(x)$
$b$	18
$b+5$	24
$b+25$	$n$

11) What is the value of  $n$ ?

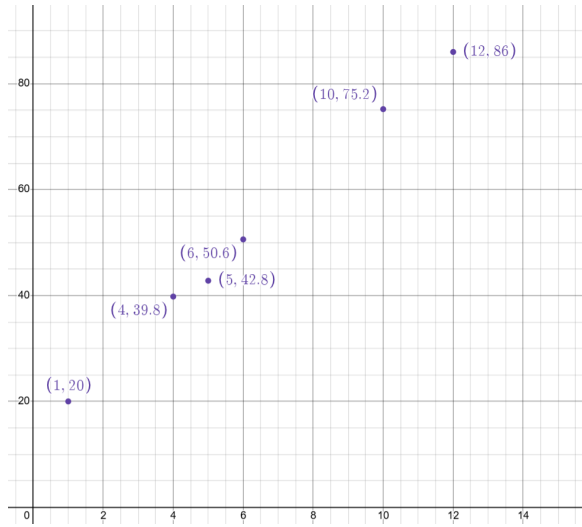
- a)  $n = 48$
- b)  $n = -48$
- c)  $n = 8$
- d)  $n = 6/5$

12) What is the value of  $g(b+15)$  ?

- a) 19
- b) 25
- c) 36
- d) 48

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Use the following informations to solve questions number 13 and 14



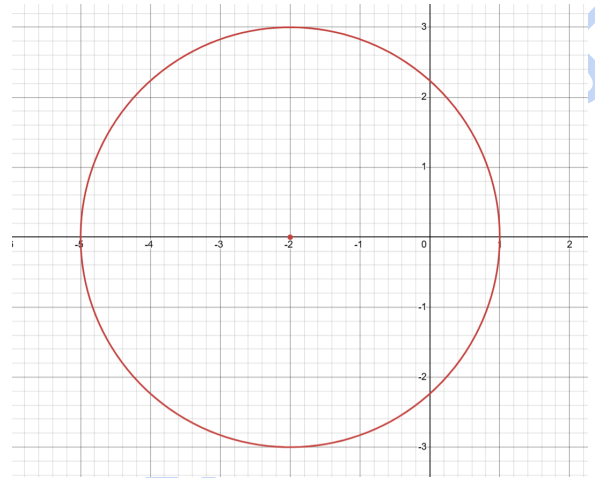
13) Find the equation of the best fit for the following data:

- a)  $y = 6x + 14$
- b)  $y = 6x + 35$
- c)  $y = 6x - 5$
- d)  $y = \frac{1}{6}x + 14$

14) What is the predicted value at  $x=8$ ?

- a) 60
- b) 61
- c) 62
- d) 65

15) Find the equation of the circle generated from shifting the following circle downward by 6 units and scale it by 2



- a)  $(x + 2)^2 + y^2 = 9$
- b)  $(x - 2)^2 + (y - 6)^2 = 36$
- c)  $(x + 2)^2 + (y - 6)^2 = 36$
- d)  $(x + 2)^2 + (y - 6)^2 = 2$

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