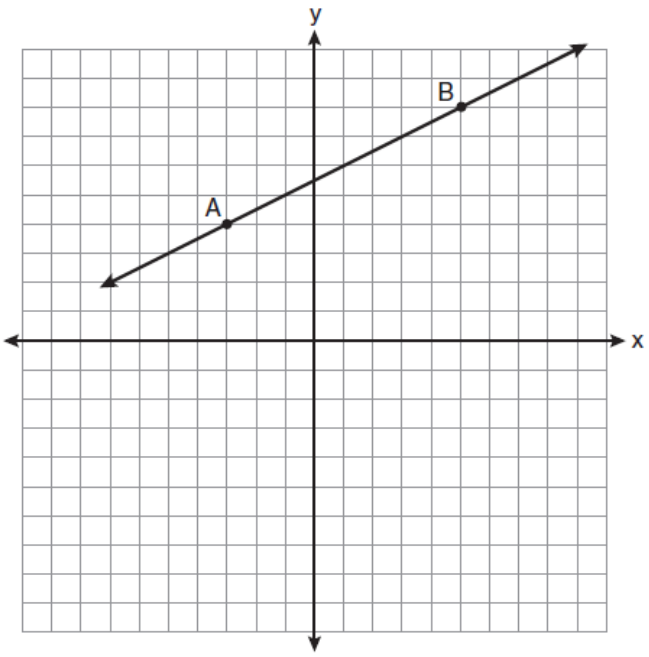
Algebra Quick-Quiz-03042022

Question 1.

In the diagram below, what is the slope of the line passing through points A and B?



(1) -2

(2) 2

(3) $-\frac{1}{2}$

(4) $\frac{1}{2}$

Question 2

$$\left(-2x^2+6x+1\right)-2\left(4x^2-3x+1\right)=$$

A $6x^2-1$

B $-10x^2-1$

C $6x^2+12x-1$

D $-10x^2+12x-1$

Question 3.

The total area of a rectangle is $4x^4 - 9y^2$. Which factors could represent the length times width?

A $(2x^2 - 3y)(2x^2 + 3y)$

B $(2x^2 + 3y)(2x^2 + 3y)$

C $(2x - 3y)(2x - 3y)$

D $(2x + 3y)(2x - 3y)$

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Question 4.

Which product of factors is equivalent to $(x + 1)^2 - y^2$?

A $(x + 1 + y)^2$

B $(x + 1 - y)^2$

C $(x - 1 + y)(x - 1 - y)$

D $(x + 1 + y)(x + 1 - y)$

Question 5.

Which expression shows the complete factorization of $12x^2 - 147$?

A $(3x - 7)(4x + 2)$

B $(4x - 21)(3x + 7)$

C $12(x - 7)(x + 7)$

D $3(2x - 7)(2x + 7)$

Question 6.

There are two numbers with the following properties.

1) **The second number is 3 more than the first number.**

2) **The product of the two numbers is 9 more than their sum.**

Which of the following represents possible values of these two numbers?

A $-6, -3$

B $-4, -1$

C $-1, 4$

D $-3, 6$

Question 7.

Which of the following *most* accurately describes the translation of the graph $y = (x+3)^2 - 2$ to the graph of $y = (x-2)^2 + 2$?

A up 4 and 5 to the right

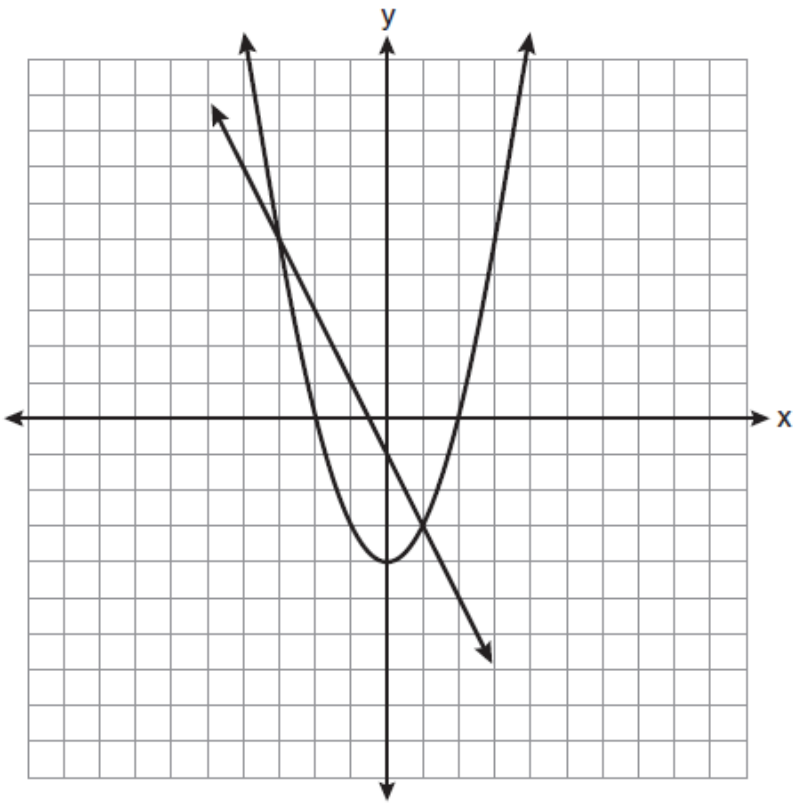
B down 2 and 2 to the right

C down 2 and 3 to the left

D up 4 and 2 to the left

Question 8.

Which ordered pair is a solution of the system of equations shown in the graph below?



(1) (–3,1)

(2) (–3,5)

(3) (0,–1)

(4) (0,–4)

Question 9.

Which of the following sentences is true about the graphs of $y = 3(x-5)^2 + 1$ and $y = 3(x+5)^2 + 1$?

A Their vertices are maximums.

B The graphs have the same shape with different vertices.

C The graphs have different shapes with different vertices.

D One graph has a vertex that is a maximum, while the other graph has a vertex that is a minimum.

Question 10.

What are the x-intercepts of the graph of $y = 12x^2 - 5x - 2$?

A 1 and $-\frac{1}{6}$

B -1 and $\frac{1}{6}$

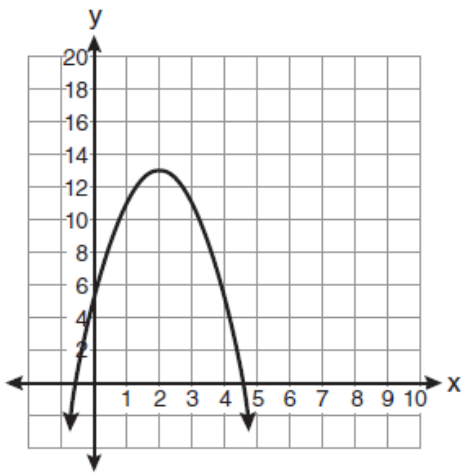
C $\frac{2}{3}$ and $-\frac{1}{4}$

D $-\frac{2}{3}$ and $\frac{1}{4}$

Bonus Question

Question 11a.

What is the equation of the axis of symmetry of the parabola shown in the diagram below?



(1) $x = -0.5$

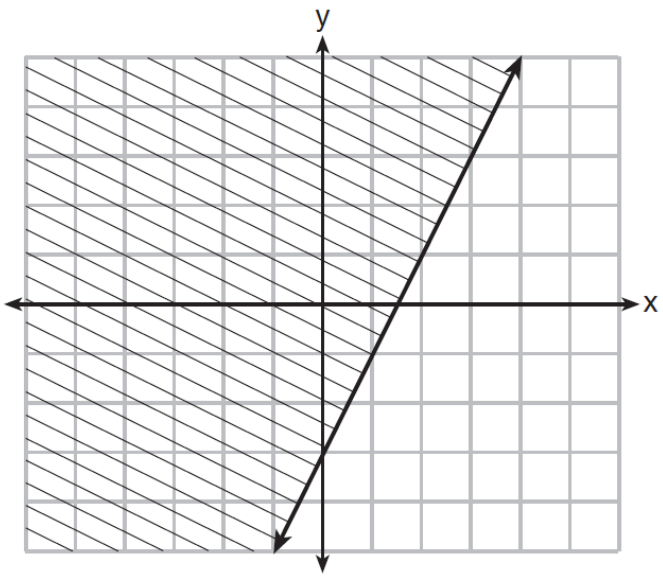
(2) $x = 2$

(3) $x = 4.5$

(4) $x = 13$

Question 11 b.

The graph of an inequality is shown below.



a) Write the inequality represented by the graph.