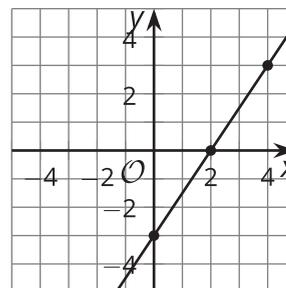


## Lesson 9 Practice Problems

1. Select **all** the equations that represent the graph shown.



- A.  $3x - 2y = 6$
- B.  $y = \frac{3}{2}x + 3$
- C.  $y = \frac{3}{2}x - 3$
- D.  $y - 3 = \frac{3}{2}(x - 4)$
- E.  $y - 6 = \frac{3}{2}(x - 2)$
2. A line with slope  $\frac{3}{2}$  passes through the point  $(1, 3)$ .
- Explain why  $(3, 6)$  is on this line.
  - Explain why  $(0, 0)$  is not on this line.
  - Is the point  $(13, 22)$  on this line? Explain why or why not.
3. Write an equation of the line that passes through  $(1, 3)$  and has a slope of  $\frac{5}{4}$ .

4. A parabola has focus  $(3, -2)$  and directrix  $y = 2$ . The point  $(a, -8)$  is on the parabola. How far is this point from the focus?

- A. 6 units
- B. 8 units
- C. 10 units
- D. cannot be determined

(From Unit 6, Lesson 8.)

5. Write an equation for a parabola with each given focus and directrix.

- a. focus:  $(5, 2)$ ; directrix:  $x$ -axis
- b. focus:  $(-2, 3)$ ; directrix: the line  $y = 7$
- c. focus:  $(0, 7)$ ; directrix:  $x$ -axis
- d. focus:  $(-3, -4)$ ; directrix: the line  $y = -1$

(From Unit 6, Lesson 8.)

6. A parabola has focus  $(-1, 6)$  and directrix  $y = 4$ . Determine whether each point on the list is on this parabola. Explain your reasoning.

- a.  $(-1, 5)$
- b.  $(1, 7)$
- c.  $(3, 9)$

(From Unit 6, Lesson 7.)

7. Select the center of the circle represented by the equation  $x^2 + y^2 - 8x + 11y - 2 = 0$ .

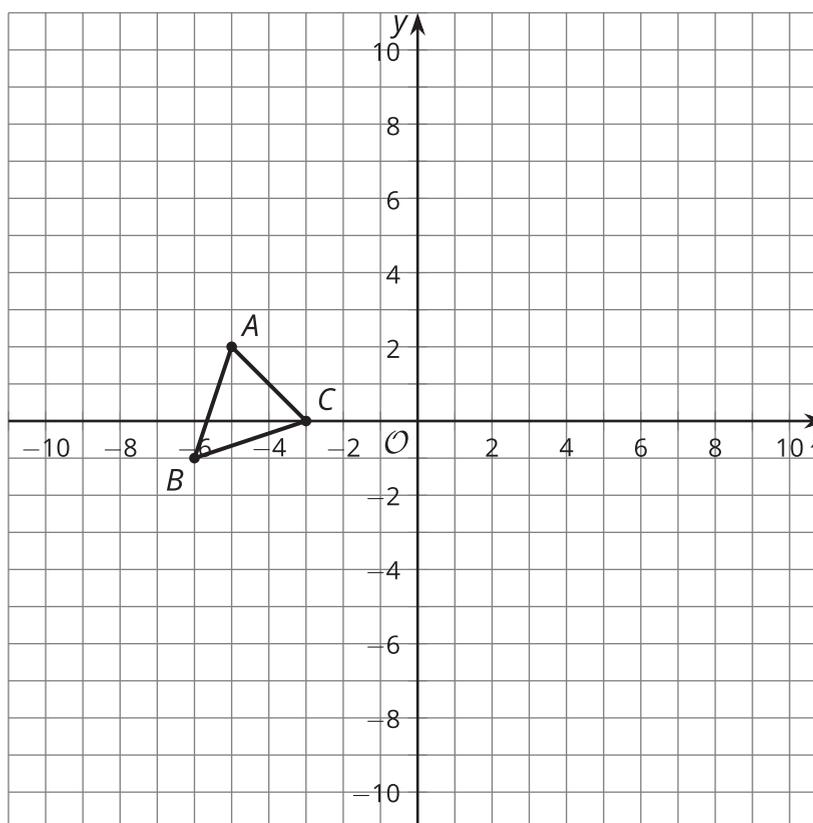
- A. (8, 11)
- B. (4, 5.5)
- C. (-4, -5.5)
- D. (4, -5.5)

(From Unit 6, Lesson 6.)

8. Reflect triangle  $ABC$  over the line  $x = -6$ .

Translate the image by the directed line segment from  $(0, 0)$  to  $(5, -1)$ .

What are the coordinates of the vertices in the final image?



(From Unit 6, Lesson 1.)