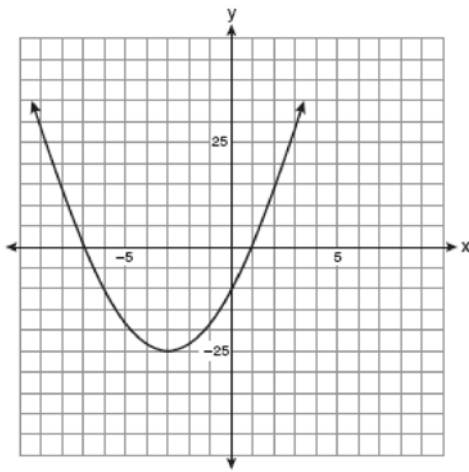


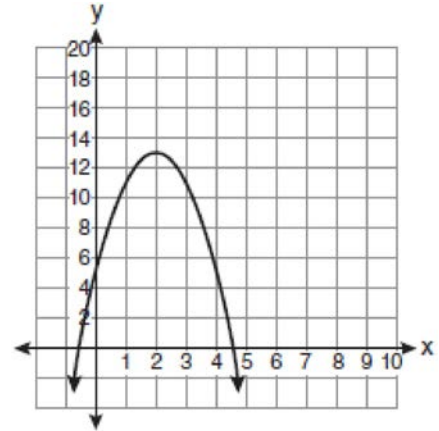
**F.IF.B.4: Graphing Quadratic Functions 1b**

- 1 Which point is *not* on the graph represented by  $y = x^2 + 3x - 6$ ?
- 1)  $(-6, 12)$
  - 2)  $(-4, -2)$
  - 3)  $(2, 4)$
  - 4)  $(3, -6)$

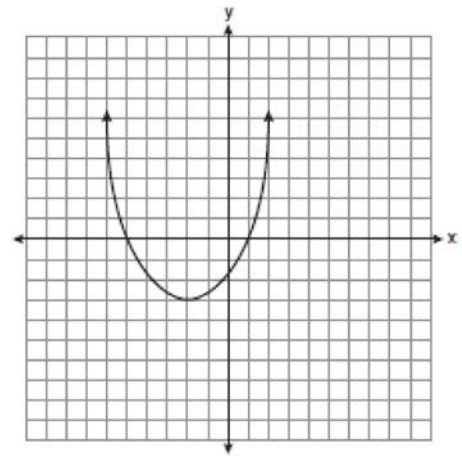
- 2 Which equation represents the axis of symmetry of the graph of the parabola below?



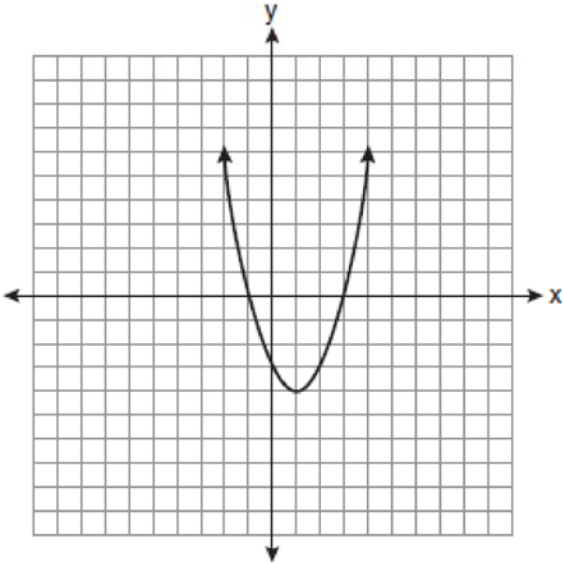
- 3 What is the equation of the axis of symmetry of the parabola shown in the diagram below?



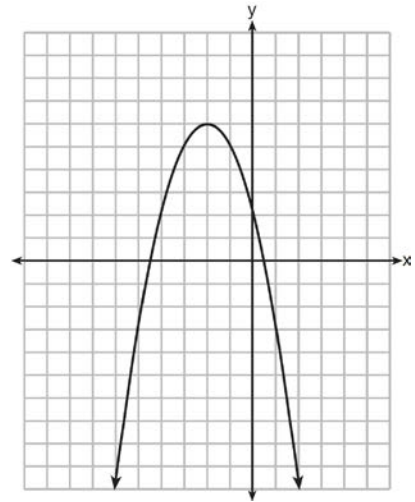
- 4 What are the vertex and the axis of symmetry of the parabola shown in the diagram below?



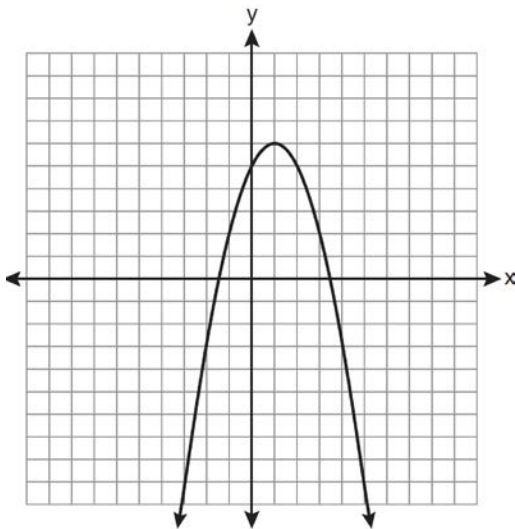
- 5 What are the vertex and axis of symmetry of the parabola shown in the diagram below?



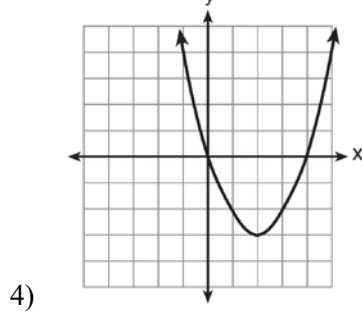
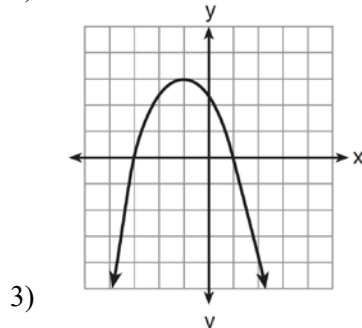
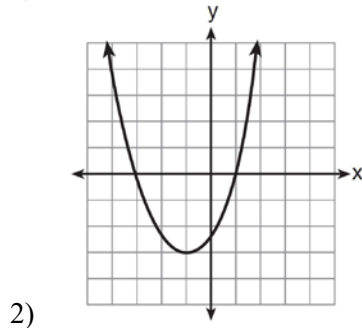
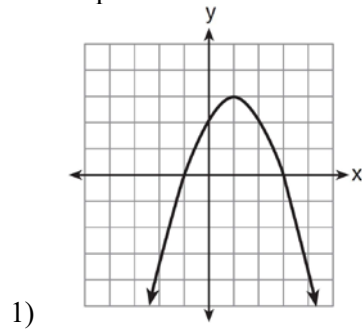
- 7 What are the coordinates of the vertex and the equation of the axis of symmetry of the parabola shown in the graph below?



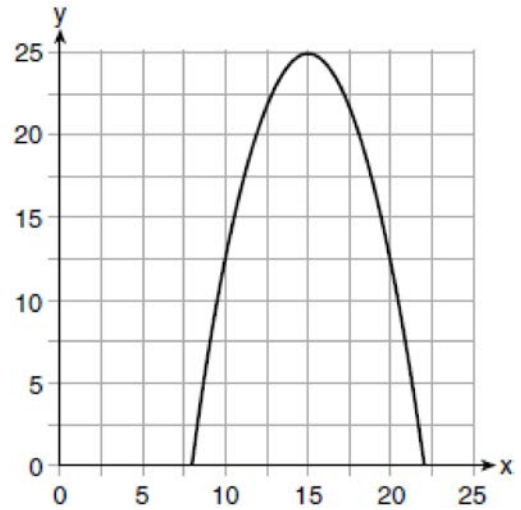
- 6 What are the vertex and the axis of symmetry of the parabola shown in the graph below?



8 Which parabola has an axis of symmetry of  $x = 1$ ?



9 The graph of a quadratic function is shown below.



An equation that represents the function could be

- 10 What are the vertex and axis of symmetry of the parabola  $y = x^2 - 16x + 63$ ?
- 11 What is an equation of the axis of symmetry of the parabola represented by  $y = -x^2 + 6x - 4$ ?
- 12 The equation of the axis of symmetry of the graph of  $y = 2x^2 - 3x + 7$  is
- 13 What is the vertex of the parabola represented by the equation  $y = -2x^2 + 24x - 100$ ?
- 14 The vertex of the parabola  $y = x^2 + 8x + 10$  lies in Quadrant

15 What is the vertex of the graph of the equation  $y = 3x^2 + 6x + 1$ ?

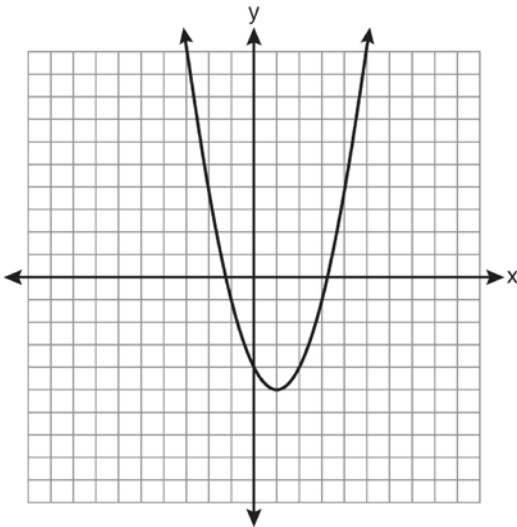
16 Which equation represents the axis of symmetry of the graph of the equation  $y = x^2 + 4x - 5$ ?

17 The axis of symmetry and the vertex of  $y = x^2 - 4x + 10$  are

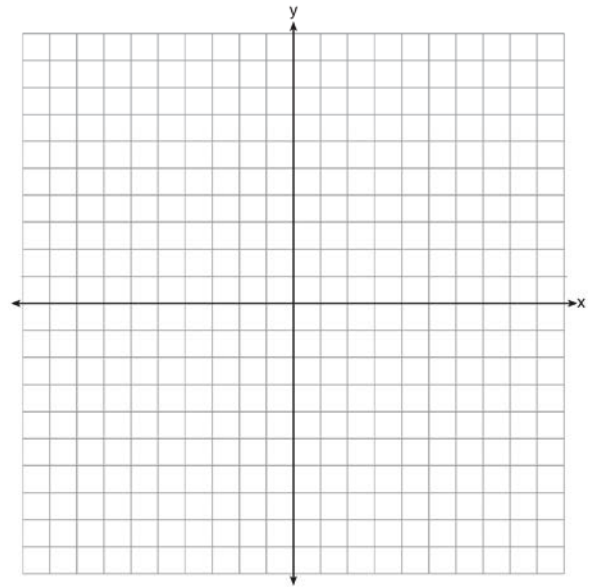
18 Find algebraically the equation of the axis of symmetry and the coordinates of the vertex of the parabola whose equation is  $y = -2x^2 - 8x + 3$ .

19 Find algebraically the equation of the axis of symmetry and the vertex of the parabola represented by the equation  $y = -x^2 - 2x + 1$ .

20 State the equation of the axis of symmetry and the coordinates of the vertex of the parabola graphed below.

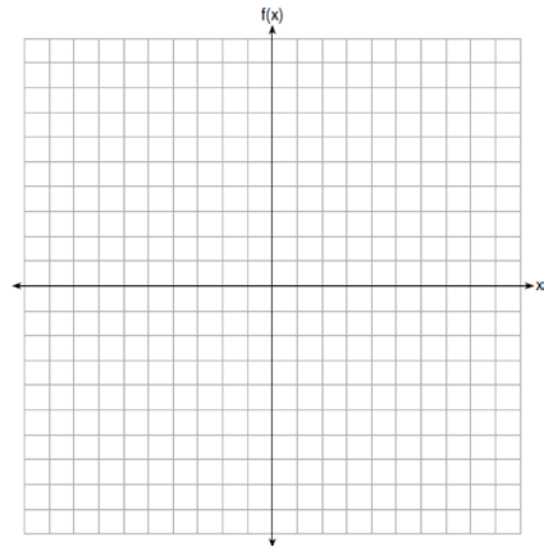


21 On the set of axes below, draw the graph of  $y = x^2 - 4x - 1$ .



State the equation of the axis of symmetry.

22 Graph the function  $f(x) = -x^2 - 6x$  on the set of axes below.



State the coordinates of the vertex of the graph.

## F.IF.B.4: Graphing Quadratic Functions 1b

### Answer Section

1 ANS: 4 REF: 081405ai

2 ANS:  
 $x = -3$

REF: 010916ia

3 ANS:  
 $x = 2$

REF: 011015ia

4 ANS:  
The vertex is  $(-2, -3)$ , and the axis of symmetry is  $x = -2$ .

REF: 060811ia

5 ANS:  
vertex:  $(1, -4)$ ; axis of symmetry:  $x = 1$

REF: 061005ia

6 ANS:  
vertex:  $(1, 6)$ ; axis of symmetry:  $x = 1$

REF: 081111ia

7 ANS:  
 $(-2, 6)$  and  $x = -2$

REF: 081214ia

8 ANS: 1 REF: 061420ia

9 ANS:

$$q(x) = -\frac{1}{2}(x - 15)^2 + 25$$

Vertex  $(15, 25)$ , point  $(10, 12.5)$   $12.5 = a(10 - 15)^2 + 25$

$$-12.5 = 25a$$

$$-\frac{1}{2} = a$$

REF: 061716ai

10 ANS:

vertex:  $(8, -1)$ ; axis of symmetry:  $x = 8$

$$x = \frac{-b}{2a} = \frac{-(-16)}{2(1)} = 8. \quad y = (8)^2 - 16(8) + 63 = -1$$

REF: 060918ia

11 ANS:

$$x = 3$$

$$x = \frac{-b}{2a} = \frac{-6}{2(-1)} = 3.$$

REF: 011127ia

12 ANS:

$$x = \frac{3}{4}$$

$$x = \frac{-b}{2a} = \frac{-(-3)}{2(2)} = \frac{3}{4}.$$

REF: 011219ia

13 ANS:

(6, -28)

$$x = \frac{-b}{2a} = \frac{-24}{2(-2)} = 6. \quad y = -2(6)^2 + 24(6) - 100 = -28$$

REF: 061214ia

14 ANS:

III

$$x = \frac{-b}{2a} = \frac{-8}{2(1)} = -4. \quad y = (-4)^2 + 8(-4) + 10 = -6. \quad (-4, -6)$$

REF: 011314ia

15 ANS:

(-1, -2)

$$x = \frac{-b}{2a} = \frac{-6}{2(3)} = -1. \quad y = 3(-1)^2 + 6(-1) + 1 = -2$$

REF: 011416ia

16 ANS:

$$x = -2$$

$$x = \frac{-b}{2a} = \frac{-4}{2(1)} = -2$$

REF: 011520ia

17 ANS:

 $x = 2$  and (2, 6)

$$x = \frac{-b}{2a} = \frac{-(-4)}{2(1)} = 2$$

REF: 061614ia

18 ANS:

$$(-2, 11). \quad x = \frac{-b}{2a} = \frac{-(-8)}{2(-2)} = -2$$

$$y = -2(-2)^2 - 8(-2) + 3 = 11$$

REF: 080934ia

19 ANS:

$$x = \frac{-(-2)}{2(-1)} = \frac{2}{-2} = -1 \quad y = -(-1)^2 - 2(-1) + 1 = -1 + 2 + 1 = 2 \quad x = -1 \quad (-1, 2)$$

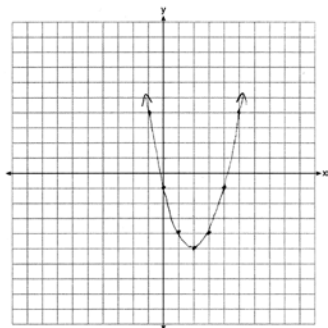
REF: 061534ia

20 ANS:

$$x = 1; (1, -5)$$

REF: 061133ia

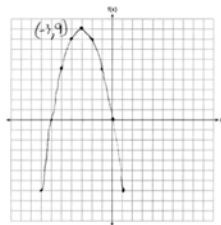
21 ANS:



$$x = \frac{-b}{2a} = \frac{-(-4)}{2(1)} = \frac{4}{2} = 2$$

REF: 061627ai

22 ANS:



REF: 061726ai