

Name: key Hr: _____

3.3B Writing Quadratic Equations Given the Zeros (roots, solutions, x intercepts) or a Graph

Write the quadratic equation in standard form when given the solutions.

1. $x = 4, 1$

$$y = (x-4)(x-1)$$

$$y = x^2 - 5x + 4$$

2. $x = -5, -2$

$$y = (x+5)(x+2)$$

$$y = x^2 + 7x + 10$$

3. $x = 7, 0$

$$y = (x-7)(x+0)$$

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

4. $x = \frac{1}{2}, 8$ $2x = 1, 2$

$$y = (2x-1)(x-8)$$

$$y = 2x^2 - 16x - x + 8$$

$$y = 2x^2 - 17x + 8$$

5. $x = \frac{3}{5}, 0$

$$y = (5x-3)(x)$$

$$y = 5x^2 - 3x$$

6. $x = \frac{2}{3}, -2$

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

$$y = 3x^2 + 6x - 2x - 4$$

$$y = 3x^2 + 4x - 4$$

7. $x = -3, 1$

$$y = (x+3)(x-1)$$

$$y = x^2 + 2x - 3$$

8. $x = -\frac{1}{3}, 2$

$$y = (3x+1)(x-2)$$

$$y = 3x^2 - 6x + x - 2$$

$$y = 3x^2 - 5x - 2$$

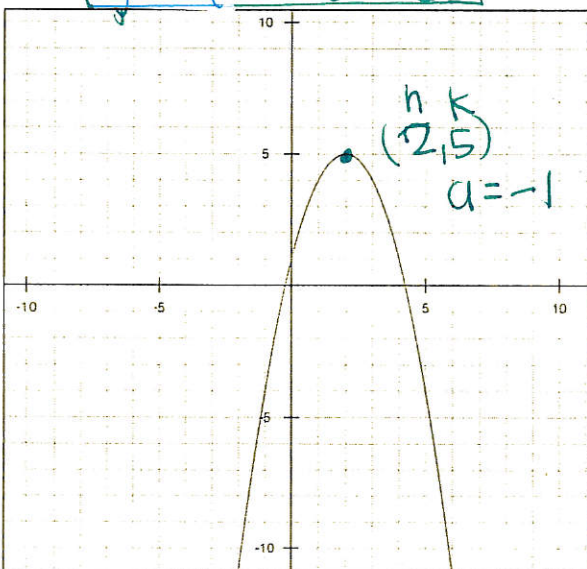
9. $x = -3, -3$

$$y = (x+3)(x+3)$$

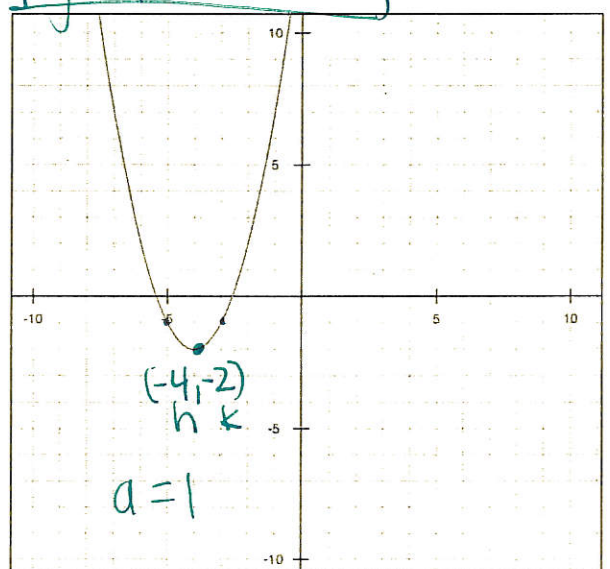
$$y = x^2 + 6x + 9$$

Write a quadratic equation given the graphs below.

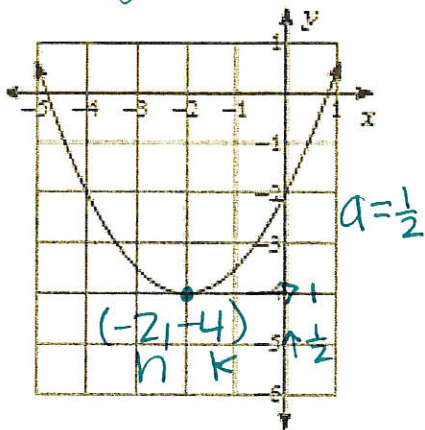
9. $y = -(x-2)^2 + 5$



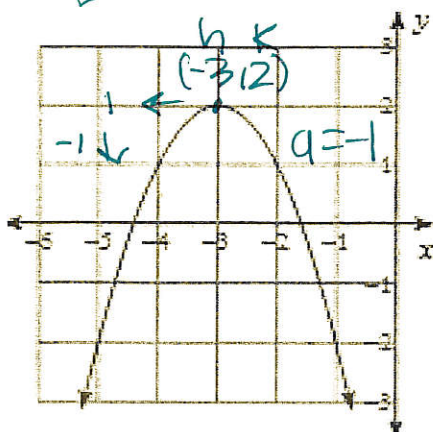
10. $y = (x+4)^2 - 2$



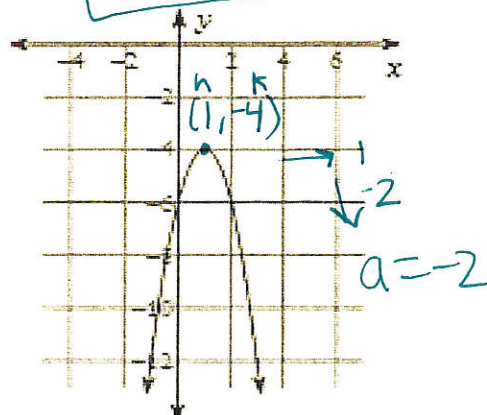
$$11. y = \frac{1}{2}(x+2)^2 - 4$$



$$12. y = -(x+3)^2 + 2$$

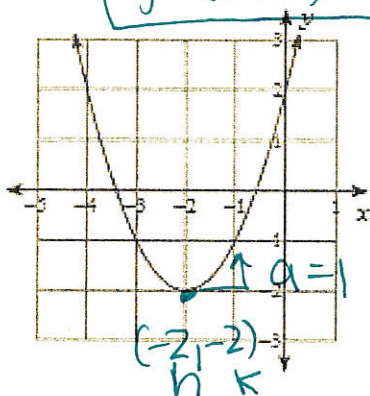


$$13. y = -2(x-1)^2 - 4$$

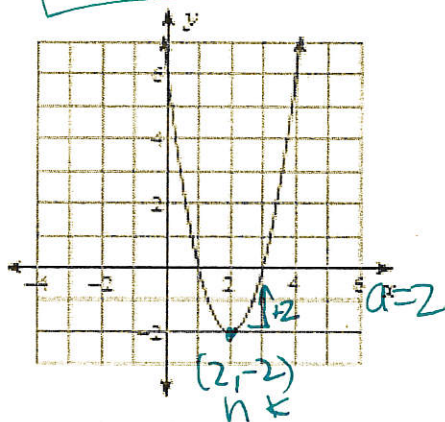


$$14. y = 1(x+2)^2 - 2$$

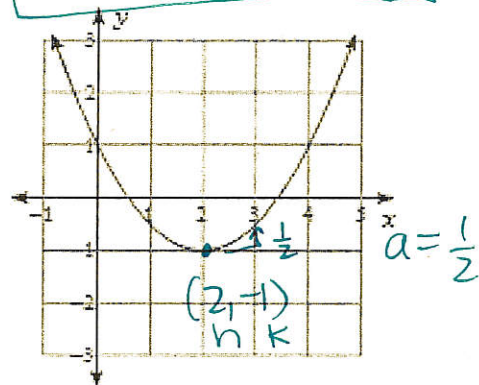
$$y = (x+2)^2 - 2$$



$$15. y = 2(x-2)^2 - 2$$



$$16. y = \frac{1}{2}(x-2)^2 - 1$$



calculator...

17. Write an equation given the following points:

$(-1, -12), (0, -6), (3, 0)$

$$y = -x^2 + 5x - 6$$

18. Write an equation given:

Vertex: $(-1, 5)$ and x-intercept of 3

$$0 = a(3+1)^2 + 5$$

$$0 = a(4)^2 + 5$$

$$-5 = a(16) + \frac{5}{5}$$

$$-\frac{5}{16} = \frac{16a}{16}$$

$$a = -\frac{5}{16}$$

$$y = -\frac{5}{16}(x+1)^2 + 5$$