

READY, SET, GO!

Name \_\_\_\_\_

Period \_\_\_\_\_

Date \_\_\_\_\_

**READY**

Topic: Standard form of quadratic equations

The standard form of a quadratic equation is defined as  $y = ax^2 + bx + c$ , ( $a \neq 0$ ).

Identify **a**, **b**, and **c** in the following equations.

Example: Given  $4x^2 + 7x - 6$ , **a = 4**, **b = 7**, and **c = -6**

1.  $y = 5x^2 + 3x + 6$

$a =$  \_\_\_\_\_

$b =$  \_\_\_\_\_

$c =$  \_\_\_\_\_

2.  $y = x^2 - 7x + 3$

$a =$  \_\_\_\_\_

$b =$  \_\_\_\_\_

$c =$  \_\_\_\_\_

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

$a =$  \_\_\_\_\_

$b =$  \_\_\_\_\_

$c =$  \_\_\_\_\_

4.  $y = 6x^2 - 5$

$a =$  \_\_\_\_\_

$b =$  \_\_\_\_\_

$c =$  \_\_\_\_\_

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

$a =$  \_\_\_\_\_

$b =$  \_\_\_\_\_

$c =$  \_\_\_\_\_

6.  $y = 8x^2 - 5x - 2$

$a =$  \_\_\_\_\_

$b =$  \_\_\_\_\_

$c =$  \_\_\_\_\_

Multiply and write each product in the form  $y = ax^2 + bx + c$ . Then identify **a**, **b**, and **c**.

7.  $y = x(x - 4)$

$a =$  \_\_\_\_\_

$b =$  \_\_\_\_\_

$c =$  \_\_\_\_\_

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

$a =$  \_\_\_\_\_

$b =$  \_\_\_\_\_

$c =$  \_\_\_\_\_

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

$a =$  \_\_\_\_\_

$b =$  \_\_\_\_\_

$c =$  \_\_\_\_\_

10.  $y = (x + 6)(x + 6)$

$a =$  \_\_\_\_\_

$b =$  \_\_\_\_\_

$c =$  \_\_\_\_\_

11.  $y = (x - 3)^2$

$a =$  \_\_\_\_\_

$b =$  \_\_\_\_\_

$c =$  \_\_\_\_\_

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

$a =$  \_\_\_\_\_

$b =$  \_\_\_\_\_

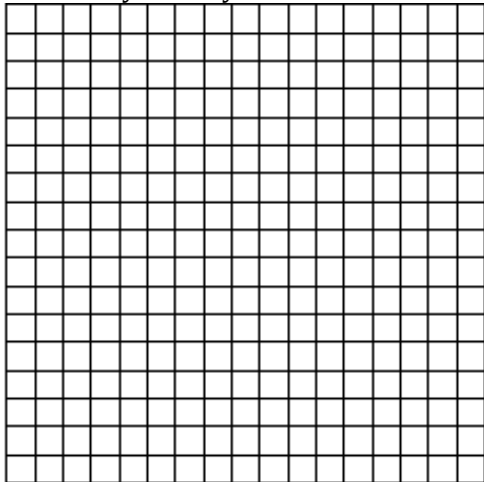
$c =$  \_\_\_\_\_

**SET**

Topic: Graphing a standard  $y=x^2$  parabola

13. Graph the equation  $y = x^2$ .

Include at least 3 accurate points on each side of the axis of symmetry.



a. State the vertex of the parabola.

b. Complete the table of values for  $y = x^2$ .

$x$	$f(x)$
-3	
-2	
-1	
0	
1	
2	
3	

Topic: Writing the equation of a transformed parabola in vertex form.

Find a value for  $\omega$  such that the graph will have the specified number of x-intercepts.

14.  $y = x^2 + \omega$   
2 (x-intercepts)

15.  $y = x^2 + \omega$   
1 (x-intercept)

16.  $y = x^2 + \omega$   
no (x-intercepts)

17.  $y = -x^2 + \omega$   
2 (x-intercepts)

18.  $y = -x^2 + \omega$   
1 (x-intercept)

19.  $y = -x^2 + \omega$   
no (x-intercepts)

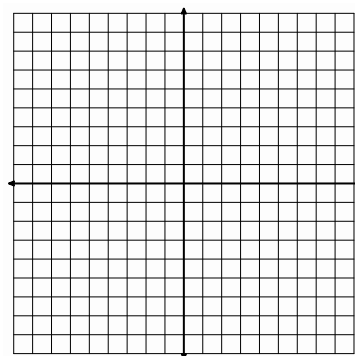
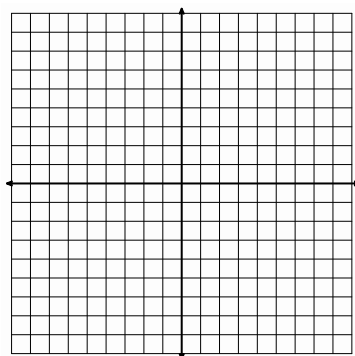
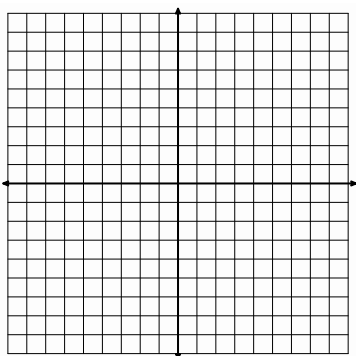
Graph the following equations. State the vertex.

(Be accurate with your key points and shape!)

20.  $y = (x - 1)^2$

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

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

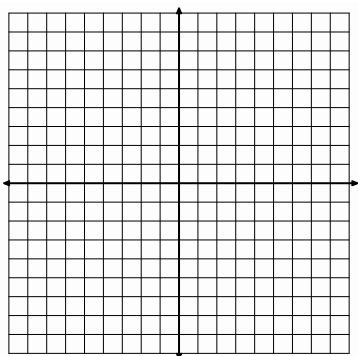


Vertex? \_\_\_\_\_

Vertex? \_\_\_\_\_

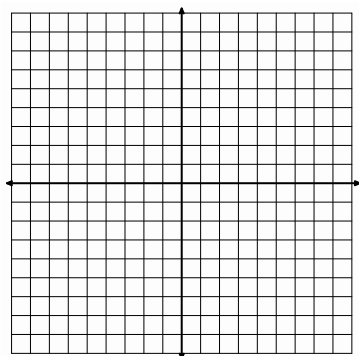
Vertex? \_\_\_\_\_

23.  $y = (x + 3)^2$



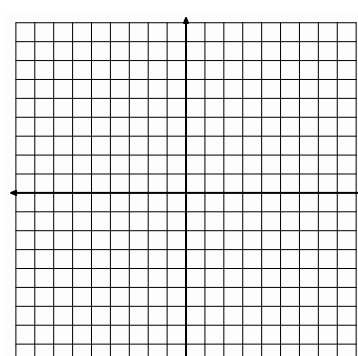
Vertex? \_\_\_\_\_

24.  $y = -(x + 3)^2 - 4$



Vertex? \_\_\_\_\_

25.  $y = -0.5(x + 1)^2 + 4$



Vertex? \_\_\_\_\_

**GO**

Topic: Features of Parabolas

**Use the table to identify the vertex, the equation for the axis of symmetry (AoS), and state the number of x-intercept(s) the parabola will have, if any. State whether the vertex will be a *minimum* or a *maximum*.**

26.

x	y
-4	10
-3	3
-2	-2
-1	-5
0	-6
1	-5
2	-2

- a. Vertex: \_\_\_\_\_
- b. AoS: \_\_\_\_\_
- c. x-int(s): \_\_\_\_\_
- d. MIN or MAX

27.

x	y
-2	49
-1	28
0	13
1	4
2	1
3	4
4	13

- a. Vertex: \_\_\_\_\_
- b. AoS: \_\_\_\_\_
- c. x-int(s): \_\_\_\_\_
- d. MIN or MAX

28.

x	y
-7	-9
-6	3
-5	7
-4	3
-3	-9
-2	-29
-1	-57

- a. Vertex: \_\_\_\_\_
- b. AoS: \_\_\_\_\_
- c. x-int(s): \_\_\_\_\_
- d. MIN or MAX

29.

x	y
-8	-9
-7	-8
-6	-9
-5	-12
-4	-17
-3	-24
-2	-33

- a. Vertex: \_\_\_\_\_
- b. AoS: \_\_\_\_\_
- c. x-int(s): \_\_\_\_\_
- d. MIN or MAX