

### Week 3 Online Learning

Week of April 13<sup>th</sup> covers Algebra Nation Section 6: Topics 1 - 5

**Day 1:** Evaluate Quadratics

Find the vertex of a Quadratic

**Day 2:** Graph Quadratics using a Table

**Day 3:** Identify the Intercepts of a Quadratic

Identify the Graph given the Quadratic Function

**Day 4:** Identify Zeros of a Quadratic given a Graph

Identify Properties of Quadratic Functions

**Day 5:** Quiz covering topics from week 3 Quadratics Review

♥♥ **Directions:** Show ALL work; box/circle answer(s) unless there is a line for the answer.

**Due:** Friday, April 17<sup>th</sup> on Focus

~Ms. Register

Office Hours: 9:00am - 10:00am

1:00pm - 2:00pm

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**Day 1 - Evaluate Quadratics & Find the vertex of a Quadratic**

Evaluate each quadratic function for the given  $x$ -value.

1)  $f(x) = (x - 7)^2 + 4$  at  $x = -6$

2)  $f(x) = 5x^2 - 2x + 1$  at  $x = 4$

3)  $f(x) = x^2 - 14x$  at  $x = 7$

4)  $f(x) = -10x^2 + 13x - 3$  at  $x = -1$

Find the vertex of each quadratic function.

1)  $f(x) = (x + 3)^2 - 21$

2)  $f(x) = -(x - 2)^2 - 7$

3)  $f(x) = 5(x - 7)(x + 2)$

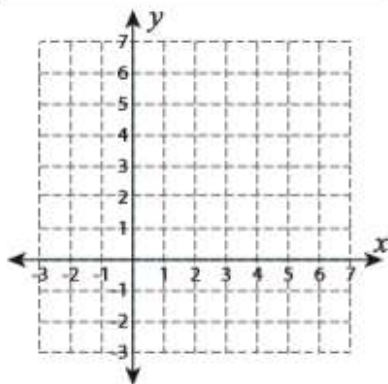
4)  $f(x) = -x^2 - 10x - 9$

## Day 2 - Graph Quadratics using a Table

Complete the function table and sketch the graph.

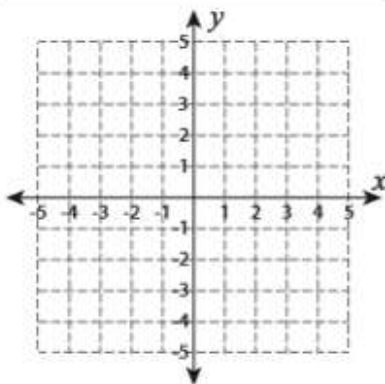
1)  $f(x) = x^2 - 6x + 11$

$x$	1	2	3	4	5
$f(x)$					



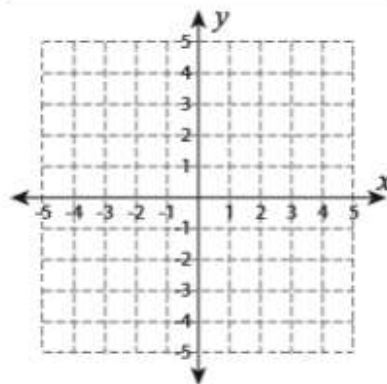
2)  $f(x) = -(x+1)^2 + 3$

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



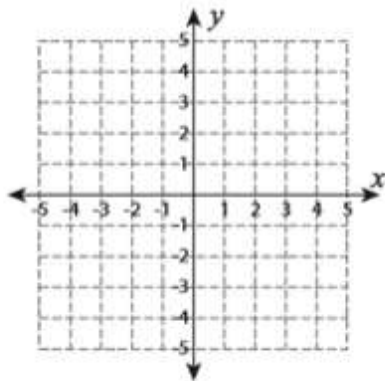
3)  $f(x) = x^2 + 4x + 1$

$x$	-4	-3	-2	-1	0
$f(x)$					



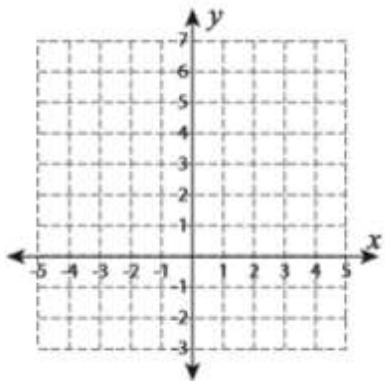
4)  $f(x) = x^2 - 2$

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



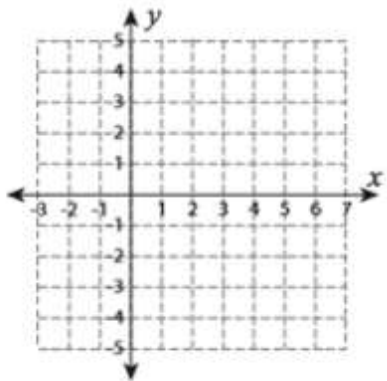
5)  $f(x) = (x-1)^2 + 1$

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



6)  $f(x) = x^2 - 8x + 16$

$x$	2	3	4	5	6
$f(x)$					



**Day 3 - Identify the Intercepts of a Quadratic & Identify the Graph given the Function**

Identify the x-intercepts and the y-intercept for each quadratic function.

1)  $f(x) = x^2 + 9x + 18$

2)  $f(x) = 3(x + 4)(x - 5)$

x-intercepts are \_\_\_\_\_

x-intercepts are \_\_\_\_\_

y-intercept is \_\_\_\_\_

y-intercept is \_\_\_\_\_

3)  $f(x) = (x + 2)^2 - 16$

4)  $f(x) = 2x^2 + 6x + 4$

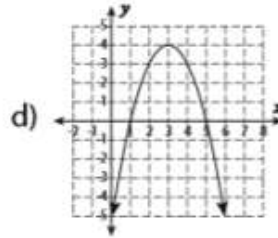
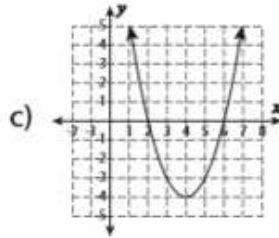
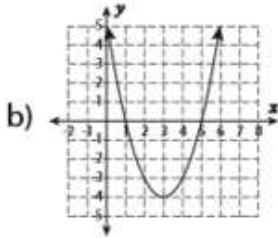
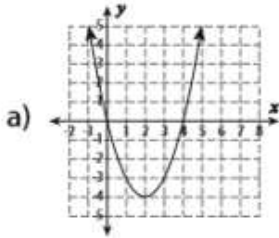
x-intercepts are \_\_\_\_\_

x-intercepts are \_\_\_\_\_

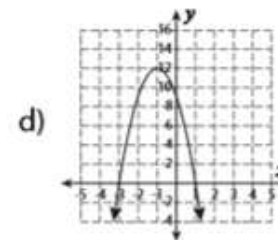
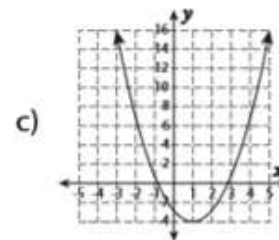
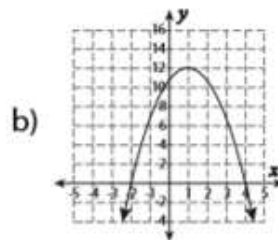
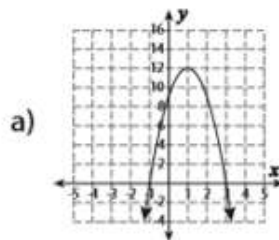
y-intercept is \_\_\_\_\_

y-intercept is \_\_\_\_\_

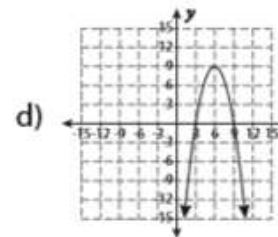
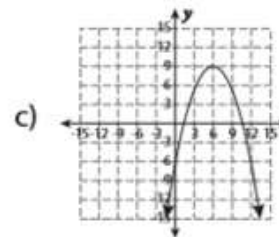
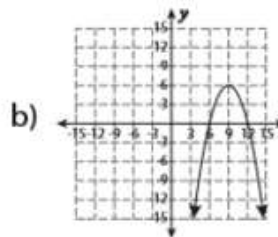
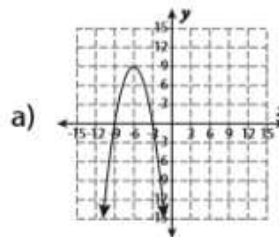
1) Which of the following is the graph of  $f(x) = (x - 1)(x - 5)$ ?



2) Which of the following is the graph of  $f(x) = -3(x - 1)^2 + 12$ ?

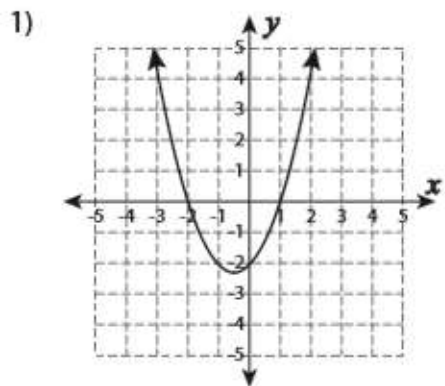


3) Which of the following is the graph of  $f(x) = -(x - 6)^2 + 9$ ?

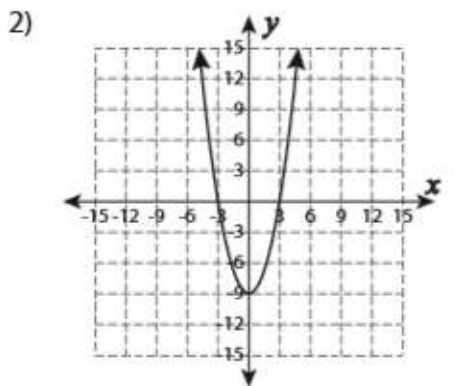


### Day 4 - Identify Zeros of a Quadratic given a Graph

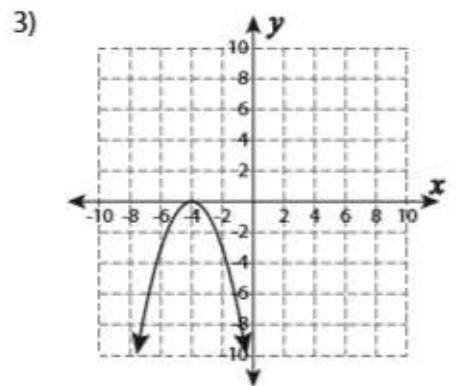
Identify the zeros of each quadratic function.



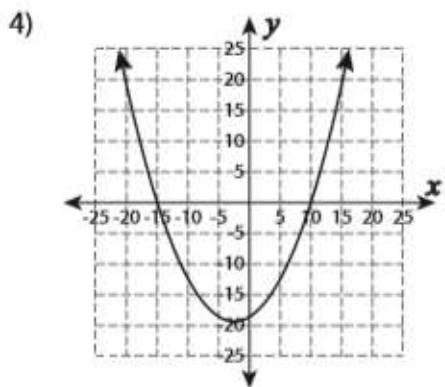
zeros : \_\_\_\_\_



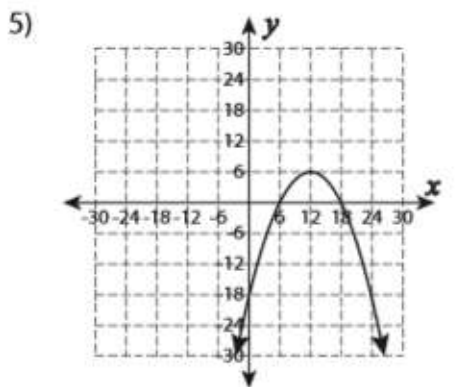
zeros : \_\_\_\_\_



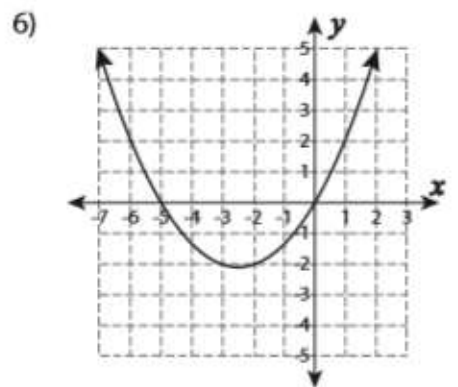
zeros : \_\_\_\_\_



zeros : \_\_\_\_\_



zeros : \_\_\_\_\_



zeros : \_\_\_\_\_

### Day 4 continued - Identify Properties of Quadratic Functions

Find the properties of each quadratic function.

1)  $f(x) = 4x^2 - 8x + 3$

Domain : \_\_\_\_\_

Range : \_\_\_\_\_

x-intercepts : \_\_\_\_\_

y-intercept : \_\_\_\_\_

Vertex : \_\_\_\_\_

Minimum value : \_\_\_\_\_

Axis of symmetry : \_\_\_\_\_

Open up or down : \_\_\_\_\_

2)  $f(x) = -x^2 - 6x + 7$

Domain : \_\_\_\_\_

Range : \_\_\_\_\_

x-intercepts : \_\_\_\_\_

y-intercept : \_\_\_\_\_

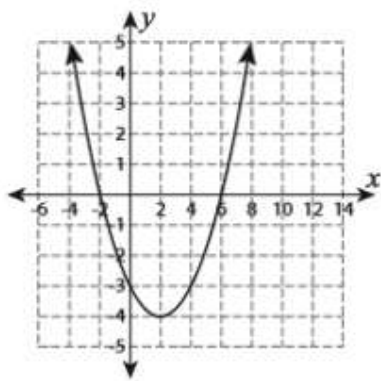
Vertex : \_\_\_\_\_

Maximum value : \_\_\_\_\_

Axis of symmetry : \_\_\_\_\_

Open up or down : \_\_\_\_\_

1)



Domain : \_\_\_\_\_

Range : \_\_\_\_\_

x-Intercepts : \_\_\_\_\_

y-intercept : \_\_\_\_\_

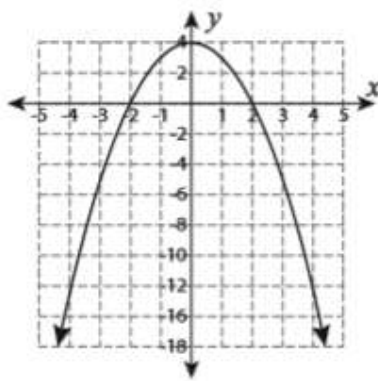
Vertex : \_\_\_\_\_

Minimum value : \_\_\_\_\_

Axis of symmetry : \_\_\_\_\_

Open up or down : \_\_\_\_\_

2)



Domain : \_\_\_\_\_

Range : \_\_\_\_\_

x-Intercepts : \_\_\_\_\_

y-intercept : \_\_\_\_\_

Vertex : \_\_\_\_\_

Maximum value : \_\_\_\_\_

Axis of symmetry : \_\_\_\_\_

Open up or down : \_\_\_\_\_