

Name: \_\_\_\_\_ Date: \_\_\_\_\_

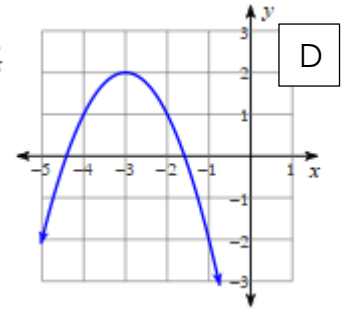
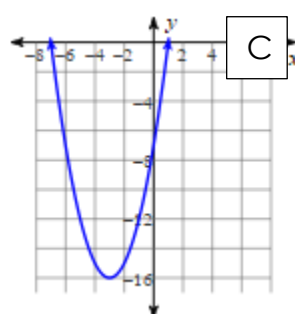
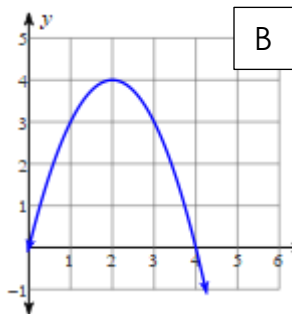
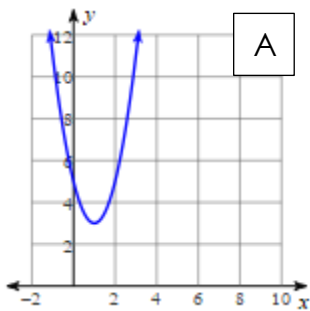
### Unit 3 Review! Graphing Quadratics

**A) For each of the following determine the vertex and axis of symmetry.**

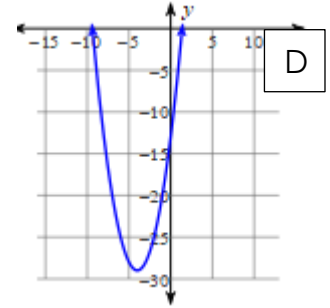
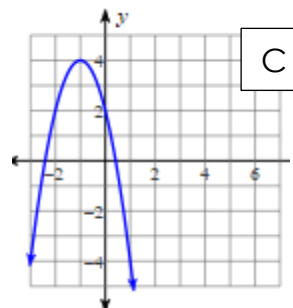
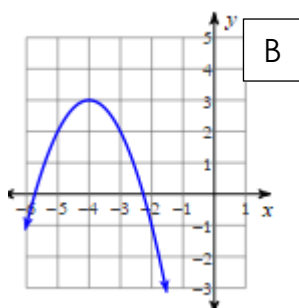
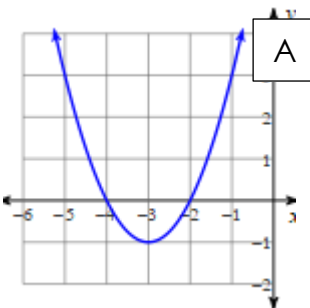
1) $f(x) = (x - 3)^2 - 4$	2) $f(x) = -2(x + 2)^2 - 1$
3) $y = 2x^2 - 4x + 5$	4) $y = -x^2 - 8x + 13$

**B) Determine which of the following graphs best represent the equation given**

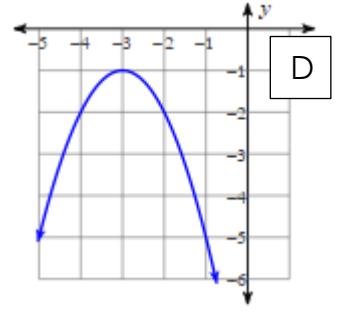
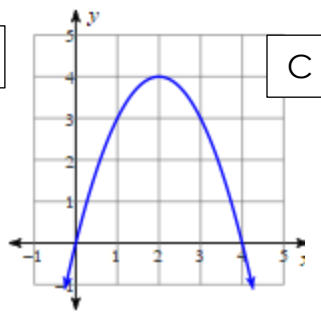
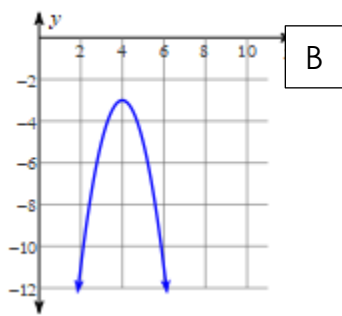
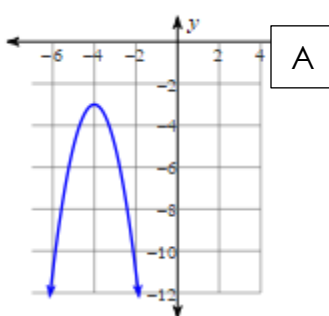
5)  $y = 2x^2 - 4x + 5$



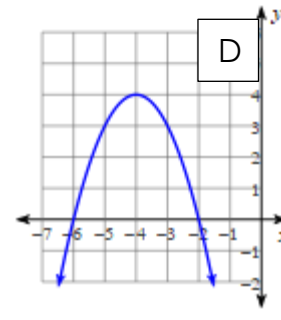
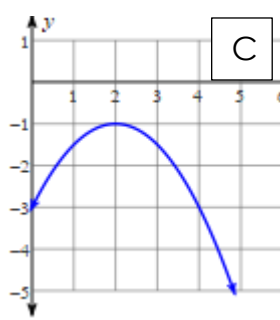
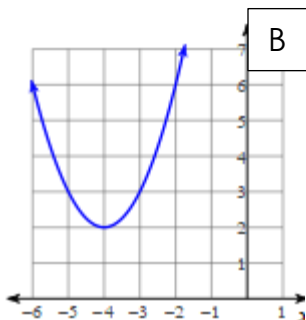
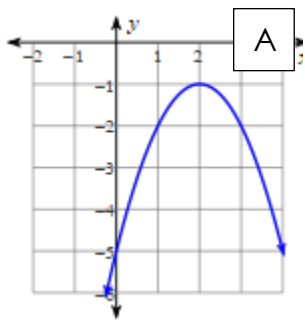
6)  $y = -x^2 - 8x - 13$



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



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



**C) Decoding word problems (matching) Given the bank of quadratic equations select ALL of the equations that match the situation given**

<b>A)</b> $y = -(x + 7)^2 - 2$	<b>B)</b> $y = -x^2 - 6x - 10$	<b>C)</b> $y = 2(x - 5)^2 - 1$
<b>D)</b> $y = x^2 + 6x + 6$	<b>E)</b> $y = \frac{1}{4}(x + 1)^2 + 2$	<b>F)</b> $y = 4x^2 - 16x + 19$

9) Which equations have a positive infinity end behavior?

10) Which of the equations have a negative infinity end behavior?

11) Which of the equations would have a vertex above the x-axis?

12) Which of the equations would have a vertex below the x-axis?

13) Which of the following have a positive value for the axis of symmetry?

14) Which of the following would be transformed by being narrower than the parent function?

15) Which functions would have a left transformation?

### Part D: Analyzing a graph

Given the graph below answer the following questions:

16) Vertex: \_\_\_\_\_

17) Axis of Symmetry: \_\_\_\_\_

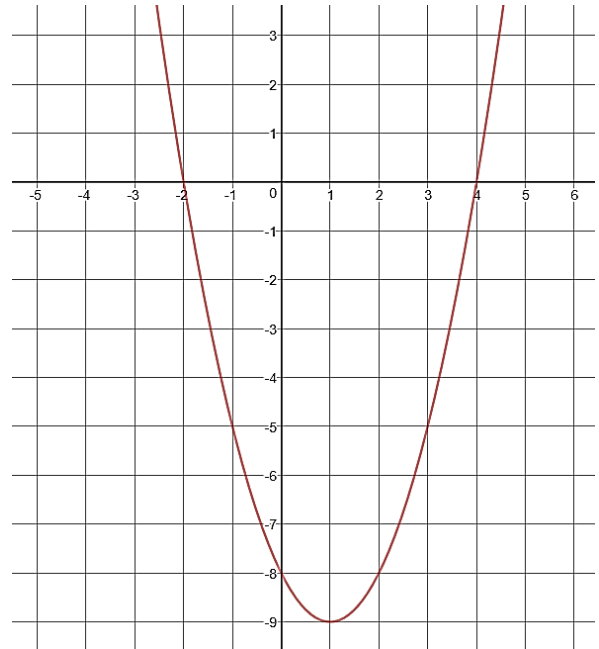
18) Zeros: \_\_\_\_\_

19) Y-intercept: \_\_\_\_\_

End Behavior:

20) As  $x \rightarrow -\infty$ ,  $y \rightarrow$  \_\_\_\_\_

21) As  $x \rightarrow \infty$ ,  $y \rightarrow$  \_\_\_\_\_



### Part E: Application

A frog is about to hop from the bank of a creek. The path of the jump can be modeled by the equation  $h(x) = -x^2 + 4x + 1$ , where  $h(x)$  is the frog's height above the water and  $x$  is the number of seconds since the frog jumped.

15) At what **time** does the frog reach its maximum height?

16) What is the **maximum height** of the frog at this point in time?