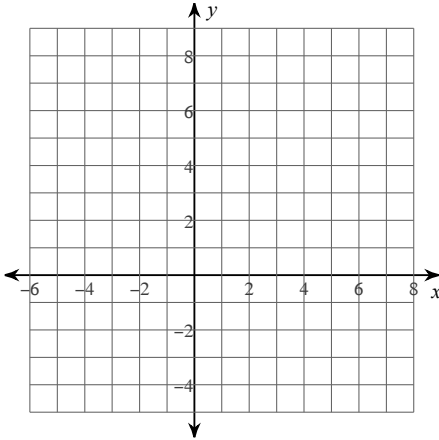


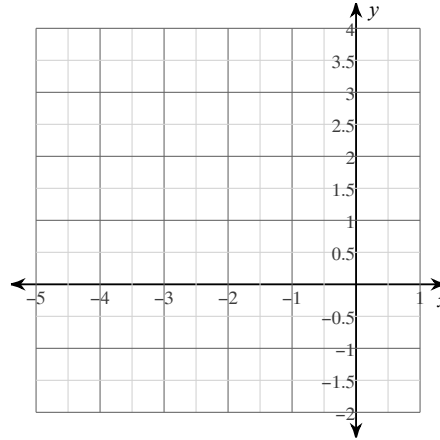
WS Unit 7 Review

Find the vertex and axis of symmetry. Then, using your graphing calculator, sketch the graph of each function.

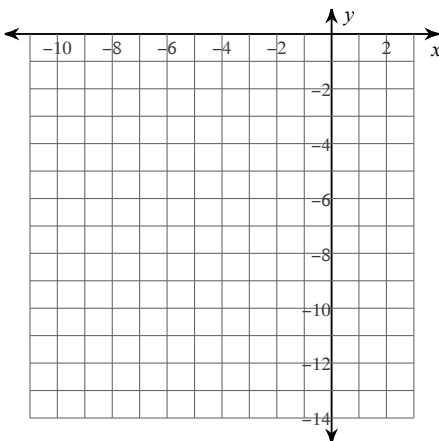
1) $y = 3x^2 - 12x + 8$



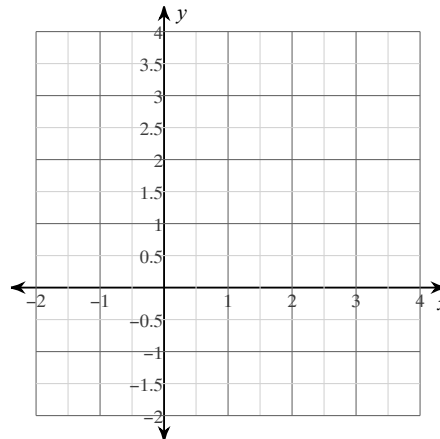
2) $y = x^2 + 4x + 3$



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



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



5) Using the graph from question #2, answer the following:

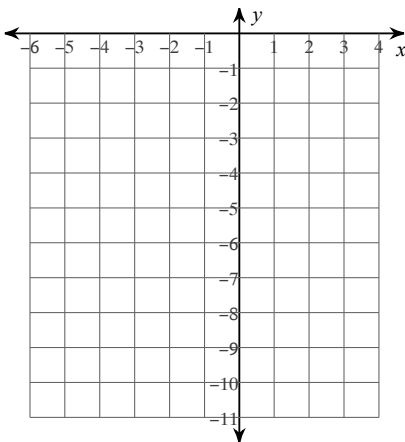
- a) What is the vertex? _____
- b) What is the axis of symmetry? _____
- c) What is the y-intercept (as an ordered pair)? _____
- d) What is the domain? _____
- e) What is the range? _____
- f) Does it have a maximum or a minimum? _____ What is the value? _____
- g) What are the zeros of the function? _____

6) Using the graph from question #4, answer the following:

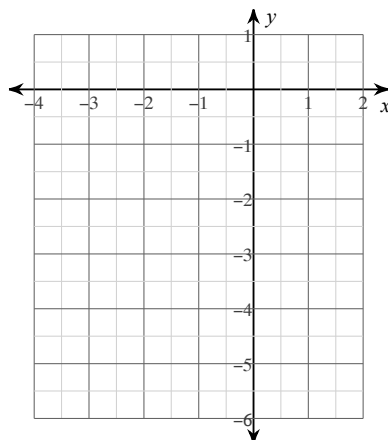
- a) What is the vertex? _____
- b) What is the axis of symmetry? _____
- c) What is the y-intercept (as an ordered pair)? _____
- d) What is the domain? _____
- e) What is the range? _____
- f) Does it have a maximum or a minimum? _____ What is the value? _____
- g) What are the zeros of the function? _____

Sketch the graph of each function. Then determine the domain and range.

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



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

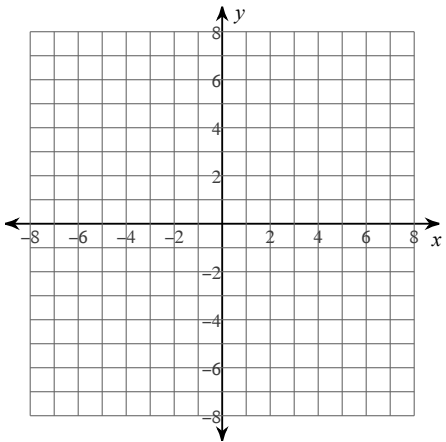


9) a) Using your graphing calculator, find the zeros of the function $f(x) = x^2 - 2x - 3$.

b) Does this function have a maximum or minimum?

c) What is the maximum or minimum value?

d) Sketch the graph of the function using your values you found.



10) The function $h(x) = -16x^2 + 32x + 2$ represents the height in feet of a softball after x seconds. Find the maximum height of the softball.

11) The function $h(x) = -16x^2 + 64x$ represents the height in feet of a firework x seconds after it has been launched.

a) Find the maximum height of the firework.

b) What is the initial height of the firework?

c) How long is the firework in the air?

Describe the transformation of each quadratic function.

12) $y = 3(x - 5)^2 + 4$

13) $y = -\frac{2}{3}(x + 1)^2 + 7$

14) $y = -\frac{5}{4}(x - 11)^2$

Write a quadratic function in vertex form to represent the transformation.

15) opens up, left 8 and down 17, stretched by a factor of 4

16) vertex at $(-6, 10)$, opens up, compressed by a factor of your choice

17) up 9, right 12, opens down, compressed by $\frac{3}{7}$

18) CHALLENGE:

Write a quadratic function in vertex form whose graph satisfies the given conditions:

a) vertex at $(-5, -1)$ and pass thru $(-2, 2)$

b) vertex at $(1, 8)$ and pass thru $(3, 12)$