

# Quadratic Functions Review Assignment

Complete this assignment in the spaces provided. Hand in this assignment when you are finished.

**Part I:** For each of the following quadratic functions, sketch the graph (show at least 5 points) and provide the requested information.

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

opens upward/downward? \_\_\_\_\_

vertex: \_\_\_\_\_

max/min (and value): \_\_\_\_\_

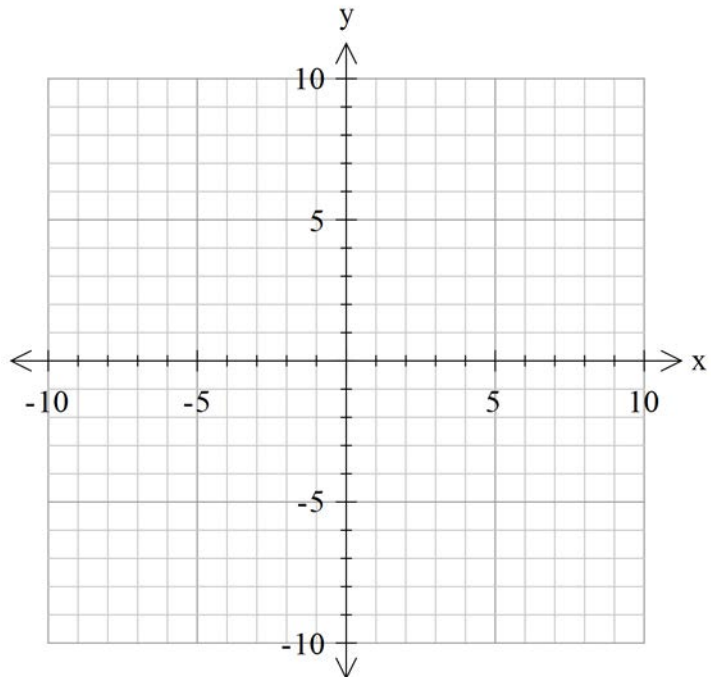
eqn. of axis of sym.: \_\_\_\_\_

domain: \_\_\_\_\_

range: \_\_\_\_\_

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

number of x-intercepts: \_\_\_\_\_



2.  $y = -3x^2 - 1$

opens upward/downward? \_\_\_\_\_

vertex: \_\_\_\_\_

max/min (and value): \_\_\_\_\_

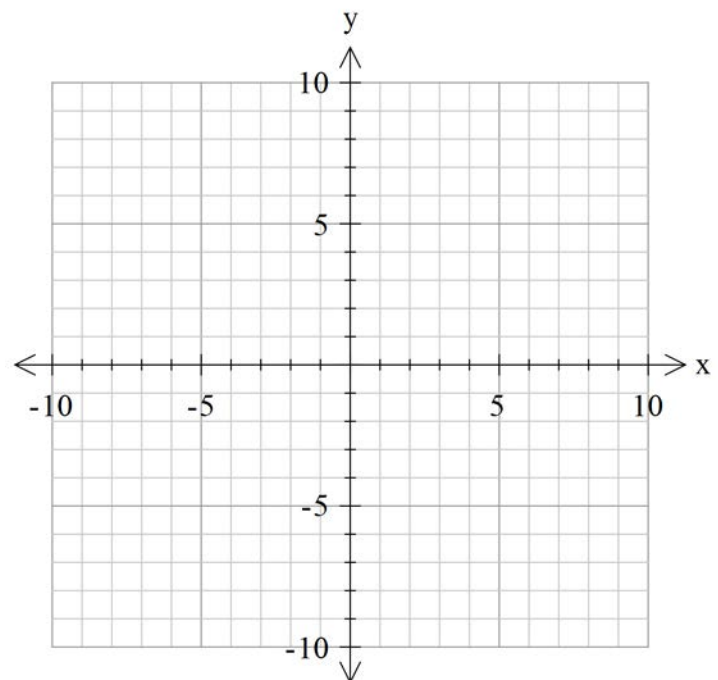
eqn. of axis of sym.: \_\_\_\_\_

domain: \_\_\_\_\_

range: \_\_\_\_\_

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

number of x-intercepts: \_\_\_\_\_



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

opens upward/downward? \_\_\_\_\_

vertex: \_\_\_\_\_

max/min (and value): \_\_\_\_\_

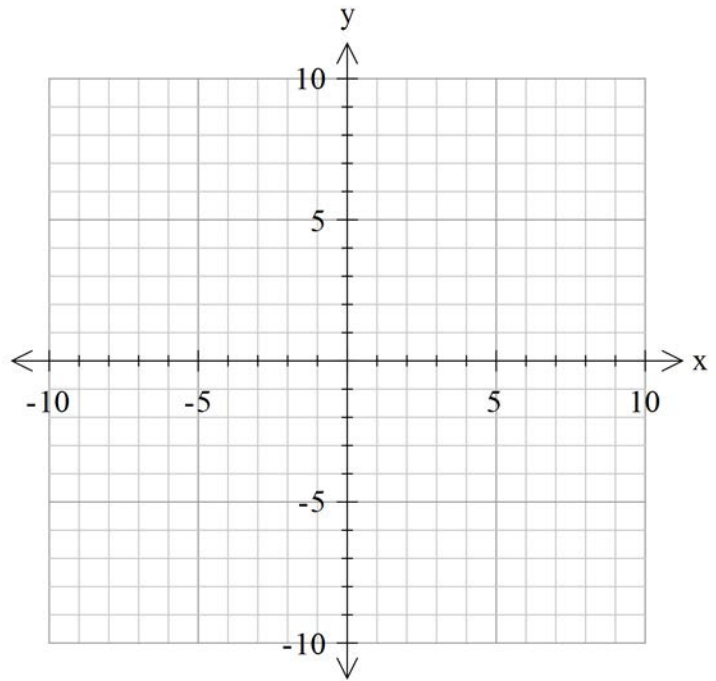
eqn. of axis of sym.: \_\_\_\_\_

domain: \_\_\_\_\_

range: \_\_\_\_\_

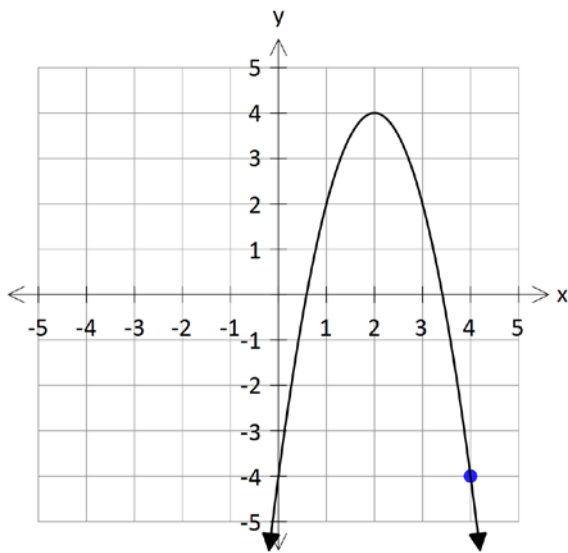
y-intercept: \_\_\_\_\_

number of x-intercepts: \_\_\_\_\_



**Part II:** Answer the following questions.

4. Determine the quadratic function in descriptive form for the parabola shown below:



5. Write the quadratic function in general form that has the following characteristics:

- x intercepts of 4 , -3
- passes through the point (2, 20)

6. Determine the vertex of the quadratic function  $y = 3x^2 + 18x - 7$ .
7. Determine the number of x-intercepts of the function  $y = -2x^2 + 8x - 3$ . Explain how you know.
8. What are values of the x intercepts of  $y = -4x^2 + 24x + 64$
9. A diver jumps from a platform and her path follows the equation  $h = -4.9t^2 + 9.8t + 3$  where "h" is her height in feet and "t" is the time in seconds.
- What is the value of the "h" intercept and what does it represent?
  - What height is the diver after 0.6 seconds (to one decimal place)?
  - What is the maximum height that she reaches? At what time does she reach this height?
  - At what time does she contact the water?

10. A farmer has 100 meters of fencing to build a rectangular pen.

a) Write a quadratic equation in general form that would model the area of this pen

b) What is the maximum area that can be made and what are the dimensions of this maximum area?

11. Adine is considering selling mukluks at the craft fair. Last year she sold mukluks for \$400 per pair and she sold 14 pairs. She predicts that for every \$40 increase in price, she will sell one pair less.

a) Write a quadratic equation that represents the revenue from her sales of mukluks.

b) What is the maximum possible revenue that she can expect?

c) What is the price that will generate the maximum revenue?