Name: _____

11.REV.1 – LESSONS 11.1 – 11.3

Past due on: _____ Period: _____

Use the distributive property to write each quadratic function in standard form. Does the function have an absolute maximum or minimum? *Refer to the 11.1 example "Writing Quadratic Functions in Standard Form" in the Chapter 11 Summary.*

1. $f(x) = 3(x^2 + 10) + 4x$
2. $g(n) = 3 - 5n(n - 10)$
3. $h(t) = -9(t - 10) - 8t^2$

Write an expression that represents the length in terms of the width, x. Then write a quadratic function in standard form that represents the area, A, as a function of the width. *Refer to the 11.1 example "Writing Quadratic Functions in Standard Form" in the Chapter 11 Summary.*

Use a graphing calculator to determine the absolute maximum or minimum of this function. Describe what it means in terms of the problem situation. *Refer to the 11.1 example "Identifying Maximums & Minimums of Quadratic Graphs" in the Chapter 11 Summary.*

4. A builder is designing a rectangular parking lot. She has 450 feet of fencing to enclose the parking lot around **three** sides.

   If x = the width, then the length = _____ & the area, A = _____

   Absolute maximum or minimum? _____ & coordinates: _____

   Contextual meaning:

5. Lyn is designing a rectangular quilt. She has 20 feet of piping to finish the quilt around **all 4** sides.

   If x = the width, then the length = _____ & the area, A = _____

   Absolute maximum or minimum? _____ & coordinates: _____

   Contextual meaning:

Calculate the first and second differences for each table of values. Describe the type of function represented by the table: increasing linear, decreasing linear, positive quadratic or negative quadratic. *Refer to the 11.2 example "Identifying Linear & Quadratic Functions" in the Chapter 11 Summary.*

6.

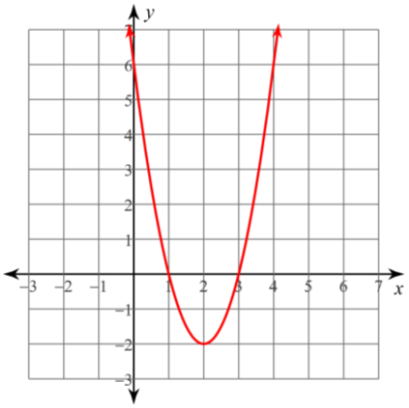
x	y	FIRST DIFFERENCES	SECOND DIFFERENCES
-2	7		
-1	9	_____	_____
0	11	_____	_____
1	13	_____	
2	15		

7.

x	y	FIRST DIFFERENCES	SECOND DIFFERENCES
-2	-5		
-1	-8	_____	_____
0	-17	_____	_____
1	-32	_____	
2	-53		

For each function shown, identify the domain, range, maximum or minimum, y-intercept, zeros, and the intervals of increase and decrease. *Refer to the THREE 11.3 examples "Identifying/Determining Domain & Range/ Zeros/Intervals of Increase & Decrease of a Quadratic Function" in the Chapter 11 Summary.*

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



Domain: _____

Range: _____

Maximum or Minimum: _____

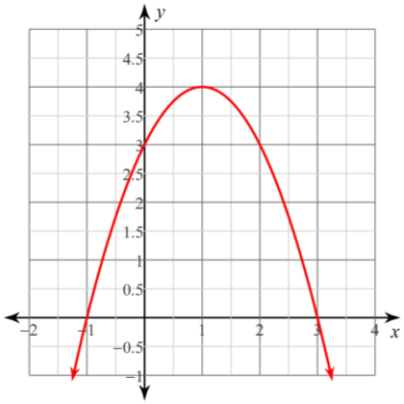
y-intercept: _____

Zeros: _____

Interval of increase: _____

Interval of decrease: _____

9. $f(x) = -x^2 + 2x + 3$



Domain: _____

Range: _____

Maximum or Minimum: _____

y-intercept: _____

Zeros: _____

Interval of increase: _____

Interval of decrease: _____

Use a graphing calculator to graph the function that represents the problem situation. Identify the absolute maximum, zeros, the domain and range of the function in terms of both the graph and the problem situation, and the intervals of increase and decrease. Round your answers to the nearest hundredth, if necessary.

10. A catapult hurls a cantaloupe. The function $g(t) = -16t^2 + 47t + 12$ represents the height of the catapult, $g(t)$, t seconds after it was launched.

Absolute maximum: _____

Zeros: _____

Domain of graph: _____

Domain of problem: _____

Range of graph: _____

Range of problem: _____

Interval of increase: _____

Interval of decrease: _____

Sketch a graph of the function below. Identify the coordinates of key points: absolute maximum, zeros, & the y-intercept.