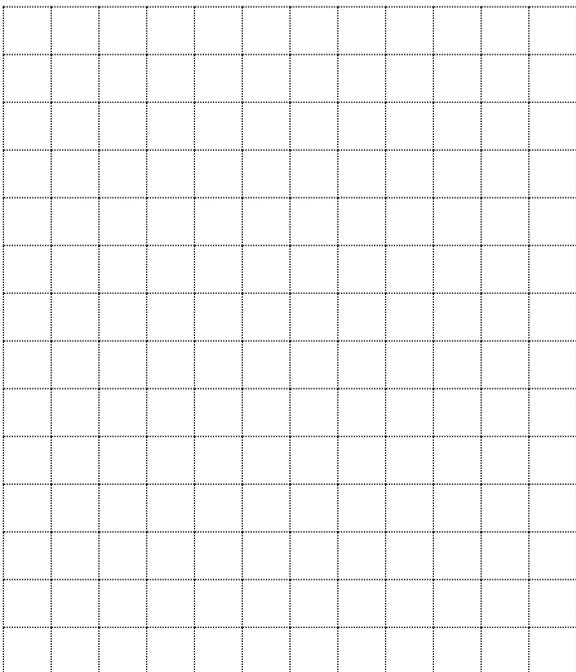
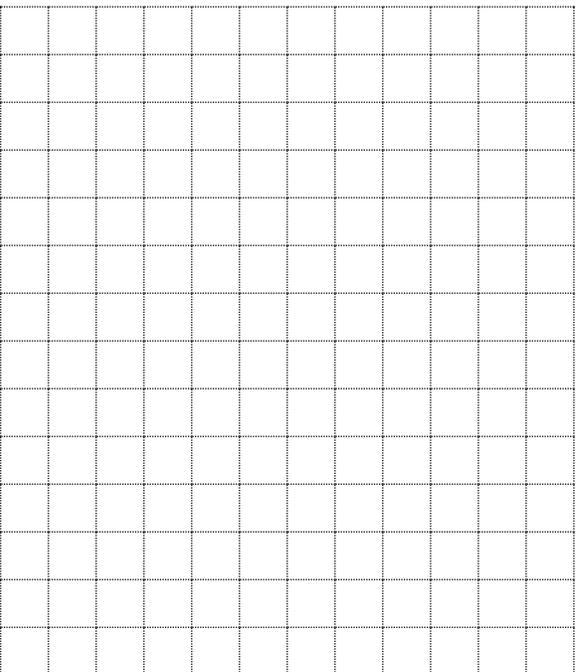
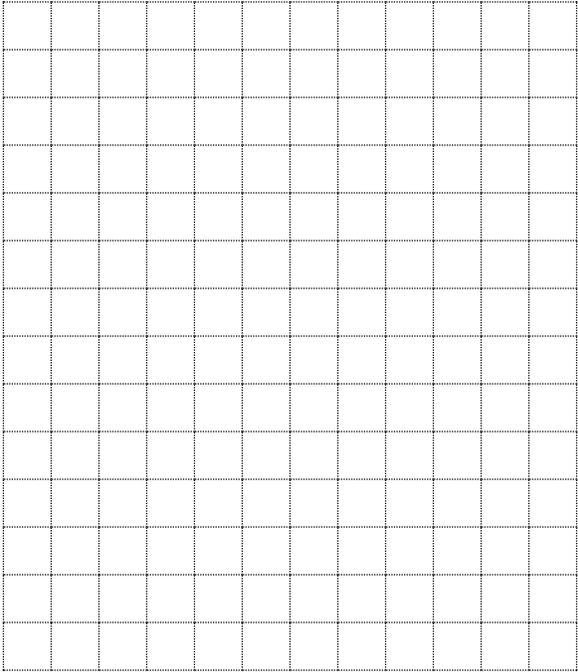
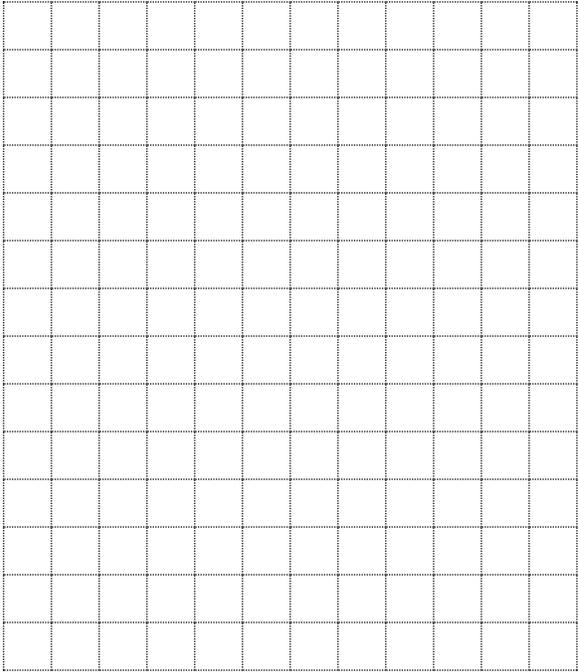


Assignment – Graphing Quadratic Functions

Answer Question 1 in the space provided

1. Complete the following as indicated.

Given: $y = 2(x + 4)^2 - 3$	Given: $y = -1.5(x - 1)^2 + 5$
State all transformations on the basic parabola:	State all transformations on the basic parabola:
Graph: 	Graph: 
State the following properties: (a) vertex: _____ (b) axis of symmetry: _____ (c) max/min value: _____ (d) domain: _____ (e) range: _____	State the following properties: (a) vertex: _____ (b) axis of symmetry: _____ (c) max/min value: _____ (d) domain: _____ (e) range: _____

<p>Given: $y = x^2 + 6x + 5$</p>	<p>Given: $y = -2x^2 + 8x - 3$</p>
<p>Complete the square to write the equation in vertex form:</p>	<p>Complete the square to write the equation in vertex form:</p>
<p>State all transformations on the basic parabola:</p>	<p>State all transformations on the basic parabola:</p>
<p>Graph:</p> 	<p>Graph:</p> 
<p>State the following properties:</p> <p>(a) vertex: _____</p> <p>(b) axis of symmetry: _____</p> <p>(c) max/min value: _____</p> <p>(d) domain: _____</p> <p>(e) range: _____</p>	<p>State the following properties:</p> <p>(a) vertex: _____</p> <p>(b) axis of symmetry: _____</p> <p>(c) max/min value: _____</p> <p>(d) domain: _____</p> <p>(e) range: _____</p>

Answer the following questions on a separate page with complete solutions

2. Determine the equation of each of the following parabolas, and state the equation in vertex form. (ie. in the form $y = a(x - h)^2 + k$)
- a) axis of symmetry $x = 3$; minimum value of -2 ; congruent to $y = 0.5x^2$
 - b) congruent to $y = 3x^2$ with **maximum** pt. at $(-4, 5)$
 - c) vertex at $(3, -8)$ through the point $(-1, 16)$
3. The x-intercepts of a parabola are $(2, 0)$ and $(6, 0)$. If the parabola opens down and is congruent to $y = 2x^2$, determine the coordinates of the vertex.
4. Complete the square and state the coordinates of the vertex:
- a) $y = 8x - x^2$
 - b) $y = 5x^2 + 20x + 18$
5. Find the values of a and k so that the points $(-5, -8)$ and $(1, -20)$ are on the parabola $y = a(x + 3)^2 + k$.

6. Given the following table of values:

x	y
0	5
1	1
2	3
3	11
4	25

- a) Calculate the finite differences to show that the function is quadratic.
- b) Determine the equation of the parabola in standard form ($y = ax^2 + bx + c$). Show all your work.

