Math 2 Unit 11 Worksheet 6 **Name:**_____
Graphing and Solving with Different Methods **Date:**_____ **Per:**_____

[1-3] Solve one part by factoring, one by completing the square, and one by quadratic formula for each problem.

1. a) $x^2 + 4x - 9 = 0$ b) $3x^2 - 7x - 5 = 0$ c) $x^2 - 2x - 15 = 0$

2. a) $2x^2 - 19x + 9 = 0$ b) $x^2 - 12x - 30 = 0$ c) $x^2 - 19x + 84 = 0$

3. a) $3x^2 - 11x - 7 = 0$ b) $x^2 - 2x - 12 = 0$ c) $3x^2 + 6x - 9 = 0$

4. What strategy did you use to decide which problem you should do by each method?

5. Solve the following problem three times, one with each method: $2x^2 - 12x - 14 = 0$
   a) Solve by: factoring b) Solve by: quadratic formula c) Solve by: completing the square

   d) Which method did you prefer for this problem? Why?

Vertex Form	Standard Form	Intercept Form
$y = a(x-h)^2 + k$	$y = ax^2 + bx + c$	$y = a(x-p)(x-q)$

[6-7] Graph the following parabolas written in vertex form and determine the key features.

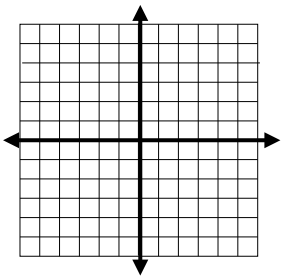
6. $y = -2(x-3)^2 + 2$

Vertex: _____

Axis of Symmetry: _____

x-intercept(s): _____

y-intercept: _____



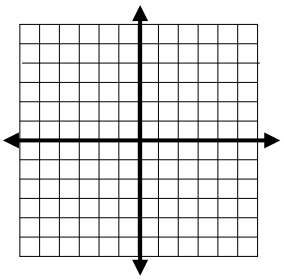
7. $y = \frac{1}{2}(x+1)^2 + 2$

Vertex: _____

Axis of Symmetry: _____

x-intercept(s): _____

y-intercept: _____



[8-9] Graph the following parabolas written in standard form and determine the key features.

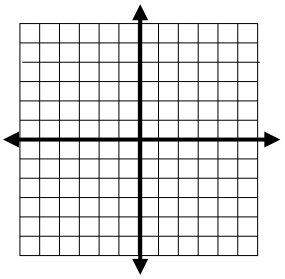
8. $y = x^2 - 2x - 3$

Vertex: _____

Axis of Symmetry: _____

x-intercept(s): _____

y-intercept: _____



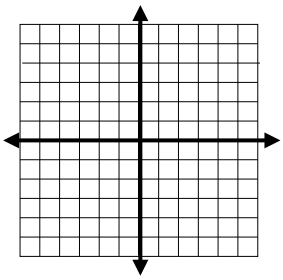
9. $y = 3x^2 + 6x + 3$

Vertex: _____

Axis of Symmetry: _____

x-intercept(s): _____

y-intercept: _____



[10-11] Graph the following parabolas written in intercept form and determine the key features.

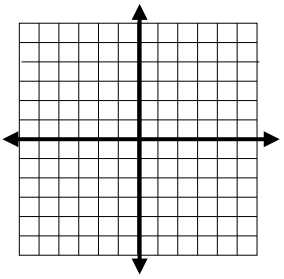
10. $y = -\frac{1}{2}(x+2)(x-4)$

Vertex: _____

Axis of Symmetry: _____

x-intercept(s): _____

y-intercept: _____



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

Vertex: _____

Axis of Symmetry: _____

x-intercept(s): _____

y-intercept: _____