Solving Quadratics Review

Name: _____

1. Find the roots of each quadratic relation, if possible.
   a) $y = x^2 + 5x - 14$
   b) $y = 6x^2 - 7x - 5$
   c) $y = 3x^2 + 5x + 7$
   d) $y = 4x^2 + 20x + 25$
   e) $y = -\frac{1}{2}x^2 + x - 18$

2. How many real, distinct roots does each quadratic relation have?
   a) $y = x^2 + x - 1$
   b) $y = 3x^2 - 7.5x + 1$
   c) $y = 16x^2 + 81$
   d) $y = -2(x + 3)^2$
   e) $y = -4.9t^2 + 50t + 1.5$

3. Solve each quadratic equation.
   a) $\frac{1}{3}x^2 + 4x = \frac{7}{3}x - 2$
   b) $1.5x^2 + 0.5x = 5$

4. Convert each quadratic equation to Vertex Form.
   a) $y = 2x^2 - 20x + 49$
   b) $y = -3x^2 - 12x - 17$

5. Complete the following chart and **sketch each parabola**. You'll need to perform your calculations on a separate sheet.

	vertex	roots (if they're real)	y-intercept	direction of opening	stretch or compression factor
$y = 2x^2 + 4x - 3$					
$y = -3x^2 - 12x - 3$					
$y = \frac{1}{2}(x - 7)^2$					
$y = 5x^2 + 30x + 46$					
$y = -3\left(x + \frac{1}{2}\right)\left(x - \frac{3}{2}\right)$					

Problem Solving

Complete the following questions from the textbook:

Page 290 #8-12

Page 311 #2, 3, 8, 14

Want more? Page 316 #2, 4-5, 7, 8, 10, 11