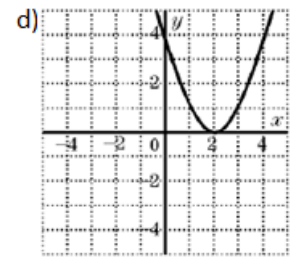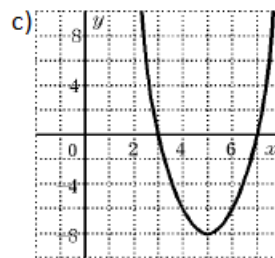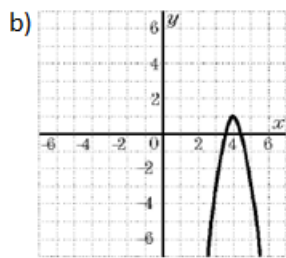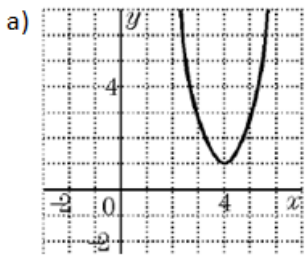Name:_____   Date:_____

Pre-Calculus 11 HW 4.2 Solving Quadratic Equations by Graphing

1. Indicate the number of roots for each of the following quadratic functions:

a)

b)

c)

d)

2. Given a quadratic function in the form of $y = a(x-p)^2 + q$:

   a. If $a > 0$ and $q > 0$, then the function will not have any roots: TRUE or FALLSE (Explain)
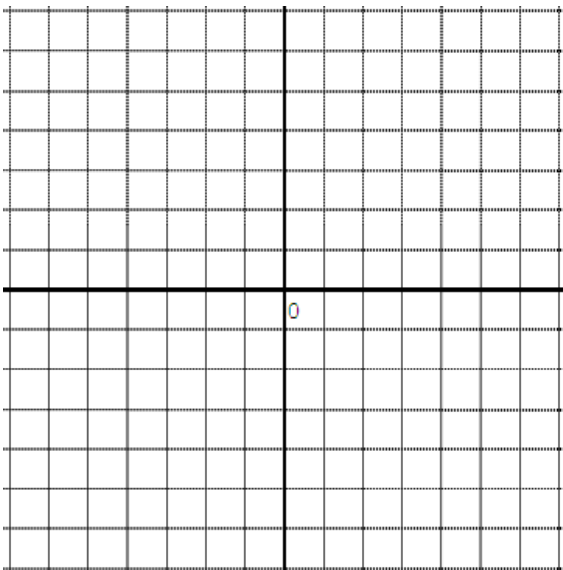
   b. If $a < 0$ and $q > 0$, then the function will have only one root: TRUE or FALLSE (Explain)

   c. If $a < 0$ and $p < 0$, then the function will at least one root: TRUE or FALLSE (Explain)
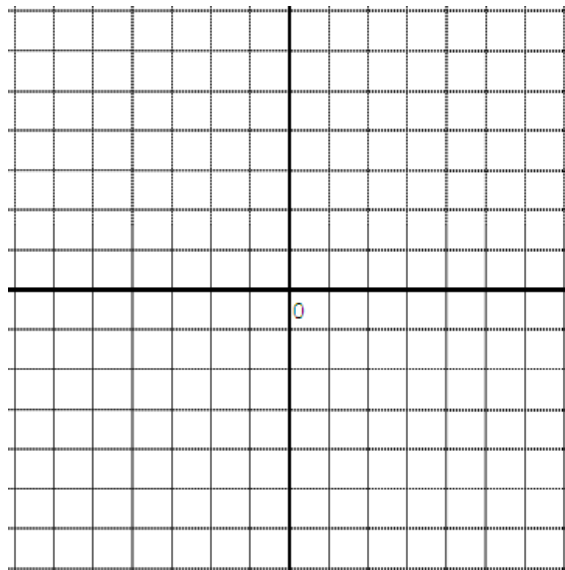
   d. If $a \times q < 0$ then the function will have two roots: TRUE or FALLSE (Explain)

3. Use a graphing calculator to find the roots (x-intercepts) for each quadratic function. Graph the quadratic equation with the grid provide:
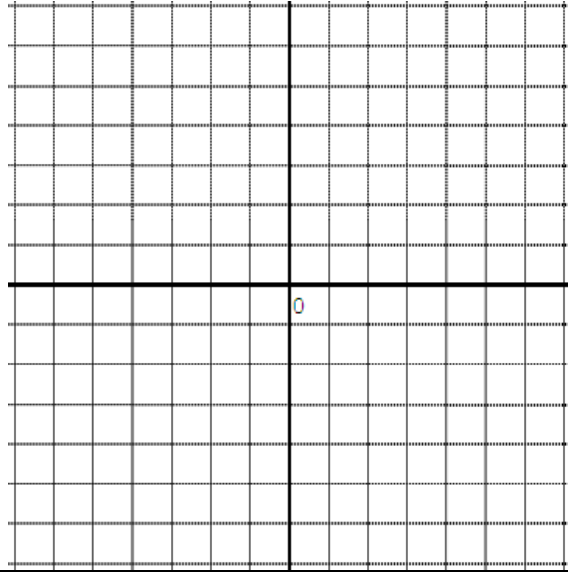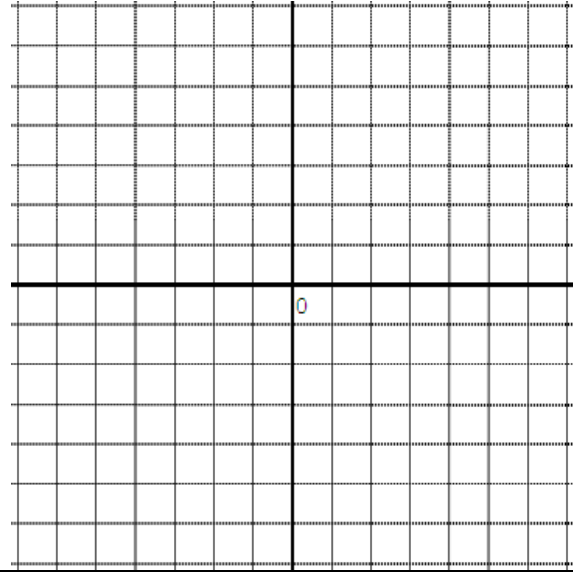
a) $y = 2x^2 + 5x - 4$	a) $y = -2x^2 + 6x - 2$

c) $y = 4x^2 + 12x + 9$

d) $y = 4x^2 + 5x + 3$

4. The roots of a quadratic equation are 5 and 1.25. Find the equation:

5. The height of a football tossed by the quarterback is given by the equation $h = -4.9t^2 + 19t + 1.4$, where "t" is the numbers of seconds after the ball is tossed. Find out how long it will take for the ball to hit the ground.

6. 24 meters of fencing are used to enclose a rectangular garden.
   i) Write an equation for the area (A) of the garden as a function of the length of one side.

   ii) Then find the length of one side if the area of the garden is 30m²