

Name _____

Mrs. Roumbos

Date _____

8A Period _____

Take Home Quiz #14

Due: _____

****Show all work where possible****

1) Solve the following system of equations algebraically and check. (20 points)

$$y = x^2 - 6x + 6$$

$$y = x - 4$$

2) Solve the following system of equations algebraically and check. (20 points)

$$y = x^2 - 4x - 2$$

$$y = x - 2$$

3) Solve the following system of equations algebraically and check. (20 points)

$$y = x^2 + 3x - 7$$

$$y - 3x = 9$$

4) Convert the function into vertex form by completing the square. Then find the vertex. (10 points)

$$g(x) = x^2 + 26x + 68$$

5) Convert the function into vertex form by completing the square. Then find the vertex. (10 points)

$$y = x^2 + 12x + 32$$

6) A rocket is shot upward from a height of 4 feet above the ground. Its path is given by the equation $h = -16t^2 + 160t + 4$ where h is the height of the bullet in feet and t is the time in seconds.

a) After how many seconds will the rocket start coming back down? (5 points)

b) What is the maximum height the rocket reaches? (5 points)

7) When an arrow is shot into the air at 24 feet above the ground, its height h , is given by the equation $h = -4t^2 + 20t + 24$, where t represents the time elapsed in seconds.

a) What is the maximum height of the arrow? (5 points)

b) Determine the value of t for which the arrow hits the ground? (5 points)