Algebra Workshop Name:_____

Worksheet 7

1. The quadratic formula is:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Use the quadratic formula to solve the following equations.

(a) $4x^2 - 7x - 2 = 0$

(b) $3x^2 - 5x + 2 = 0$

(c) $3x^2 = 5x + 2$

2. Recall that the quadratic formula is:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Use the quadratic formula to solve the following equations. Give your answers as decimals to two decimal places.

(a) $x^2 + 3x + 1 = 0$

(b) $2x^2 - 6x + 3 = 0$

(c) $4x^2 = 3x + 5$

3. Susan is one year older than Bob. The product of their ages is 306. What is Bob's age?

4. A ball is thrown directly upward with a velocity of 96 feet/second. The height of the ball after t seconds is given by the following equation:

$$h = -16t^2 + 96t$$

The maximum height attained by the ball is 144 feet. When is the ball at this height?

5. Simplify the following expressions:

   (a) $\dfrac{x^2 + 5x + 6}{x + 2}$

   (b) $\dfrac{x^2 - 9}{x + 3}$

6. Simplify by adding the fractions.

   (a) $\dfrac{x}{x + 3} + \dfrac{1}{x - 2}$

   (b) $\dfrac{1}{x - 4} + \dfrac{x + 1}{2x - 1}$