

Algebra Workshop

Name: _____

Homework 6

1. Recall that the quadratic formula is:

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

Use the quadratic formula to solve the following equations.

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

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

(c) $3x^2 - 7x + 2 = 0$

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) $x^2 + 2x - 5 = 0$

(b) $2x^2 = 3x + 4$

(c) $4x^2 + 7x = 3$

3. Simplify the following expressions:

(a) $\frac{x^2 - 7x + 12}{x - 4}$

(b) $\frac{x^2 - x - 6}{x - 3}$

4. Simplify by combining the fractions.

(a) $\frac{2}{x + 4} + \frac{x}{x - 1}$

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

5. Find all solutions to the following system of equations:

$$\begin{aligned}2x + y &= 3 \\ x^2 + 2y &= 2\end{aligned}$$

Hint: First, solve the first equation for y , and then substitute the result into the second equation.