

NAME: Solution

MAC 1147 Section 3089  
Quiz Two

Please show all of your work in a NEAT and ORGANIZED fashion.

1. (3 points) Find all solutions (if any) to the following equation:

$$\frac{2}{x} + \frac{x-7}{x+3} = 0$$
$$\frac{2(x+3) + x(x-7)}{x(x+3)} = 0, \quad x \neq 0, -3$$
$$2x+6+x^2-7x=0$$
$$x^2-5x+6=0$$
$$(x-3)(x-2)=0$$
$$x=3, 2 \text{ (both these solutions work in the original equation)}$$

2. (3 points) Solve the following quadratic equation by factoring:

$$2x^2 - 5x + 2 = 5$$
$$2x^2 - 5x - 3 = 0$$
$$2x^2 - 6x + x - 3 = 0$$
$$2x(x-3) + (x-3) = 0$$
$$(2x+1)(x-3) = 0$$
$$x = -\frac{1}{2}, 3$$

3. (3 points) Solve the following inequality, and graph the solution set:

$$|5 - 3x| > 10$$
$$5 - 3x > 10 \quad \text{or} \quad 5 - 3x < -10$$
$$-3x > 5 \quad \text{or} \quad -3x < -15$$
$$x < -\frac{5}{3} \quad \text{or} \quad x > 5$$

