

## Homework #19

## Answers

From Houghton-Mifflin Pre calculus

3<sup>rd</sup> Edition

p63:

$$32) \quad |x - 20| \geq 4$$

$$x - 20 \leq -4 \quad x - 20 \geq 4$$

$$x \leq 16 \quad x \geq 24$$

$$(x \leq 16) \vee (x \geq 24)$$

$$33) \quad |x + 14| + 3 > 17$$

$$|x + 14| > 14$$

$$x + 14 < -14 \quad x + 14 > 14$$

$$x < -28 \quad x > 0$$

$$(x < -28) \vee (x > 0)$$

$$34) \quad \frac{|x - 3|}{2} \geq 5$$

$$\frac{x - 3}{2} \leq -5 \quad \frac{x - 3}{2} \geq 5$$

$$x - 3 \leq -10 \quad x - 3 \geq 10$$

$$x \leq -7 \quad x \geq 13$$

$$(x \leq -7) \vee (x \geq 13)$$

$$36) \quad 3|4 - 5x| \leq 9$$

$$4 - 5x \geq -3 \quad 4 - 5x \leq 3$$

$$-5x \geq -7 \quad -5x \leq -1$$

$$x \leq 7/5 \quad x \geq 1/5$$

$$1/5 \leq x \leq 7/5$$

$$45) \quad (x + 2)^2 < 25$$

$$x^2 + 4x + 4 = 25$$

$$x^2 + 4x - 21 = 0$$

$$(x + 7)(x - 3) = 0$$

$$x = \{-7, 3\}$$

$$-7 < x < 3$$

$$48) \quad x^2 - 6x + 9 < 16$$

$$x^2 - 6x - 7 < 0$$

$$(x - 7)(x + 1) = 0$$

$$x = \{7, -1\}$$

$$-1 < x < 7$$

$$49) \quad x^3 - 4x \geq 0$$

$$x(x + 2)(x - 2) = 0$$

$$x = \{0, -2, 2\}$$

$$(x \leq -2) \vee (x \geq 2)$$

p180:

$$18) (7 + 3i\sqrt{2}) + (3 + 4i\sqrt{2}) = 10 + 7i\sqrt{2}$$

$$32) -72i - 32i^2 = 32 - 72i$$

$$36) (1 - 4i + 4i^2) - (1 + 4i + 4i^2) = -8i$$

$$50) \frac{8 - 7i}{1 - 2i} \cdot \frac{1 + 2i}{1 + 2i} = \frac{8 - 7i + 16i - 14i^2}{1 - 4i^2} = \frac{22 + 9i}{5}$$