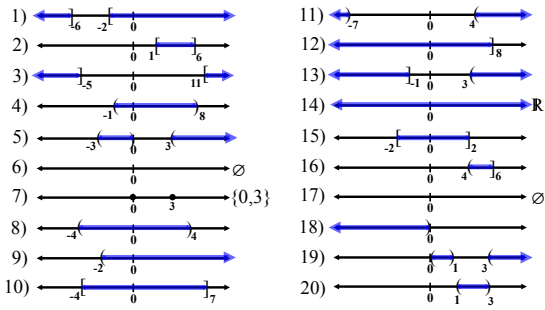


Algebra II
Mixed Inequalities



$$2) \left| k - \frac{7}{2} \right| \leq \frac{5}{2}$$

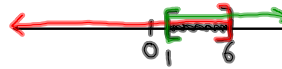
$$k - \frac{7}{2} \leq \frac{5}{2} \text{ and } k - \frac{7}{2} \geq -\frac{5}{2}$$

$$k \leq \frac{12}{2}$$

$$k \geq \frac{2}{2}$$

$$k \leq 6$$

$$k \geq 1$$



$$4) x - 7 < 3x - 5 < x + 11$$

$$x - 7 < 3x - 5 \text{ and } 3x - 5 < x + 11$$

$$-2 < 2x \quad 2x < 16$$

$$-1 < x \quad x < 8$$



$$6) \text{ Let } x = \text{Rachel}$$

$$\frac{1}{2}x + 3 = \text{Heather}$$

$$x - (\frac{1}{2}x + 3) < 4$$

$$x - \frac{1}{2}x - 3 < 4$$

$$\frac{1}{2}x < 7$$

$$x < 14$$

$$1) \text{ Let } x = \text{smallest}$$

$$x + 2 = 2^{\text{nd}}$$

$$x + 4 = 3^{\text{rd}}$$

$$x + 6 = 4^{\text{th}}$$

$$x + (x + 2) + (x + 4) + (x + 6) \leq 25$$

$$x \leq 4. \text{ some in}$$

$$\left(\frac{3s+1}{5} > \frac{s+1}{2} \right) 10$$

$$6s + 2 > 5s + 5$$

$$s + 2 > 5$$

$$s > 3$$

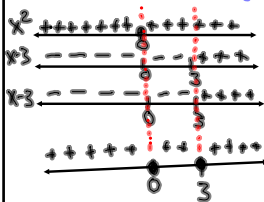
$$7) x^4 + 9x^2 \leq 6x^3$$

$$x^4 - 6x^3 + 9x^2 \leq 0$$

$$x^2(x^2 - 6x + 9) \leq 0$$

$$x^2(x-3)(x-3) \leq 0$$

negative or 0



$$14) 7x - 5(9 + 2x) < 3(1 - x)$$

$$7x - 45 - 10x < 3 - 3x$$

$$-45 - 3x < 3 - 3x$$

$$-45 < 3$$

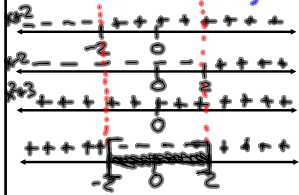
$$\mathbb{R}$$



$$5) x^4 - x^2 - 12 \leq 0$$

$$(x^2 - 4)(x^2 + 3) \leq 0$$

$$(x+2)(x-2)(x^2+3) \leq 0, \text{ neg or } 0$$



$$17) 14 - 2|7x+3| \geq 23$$

$$-2|7x+3| \geq 9$$

$$|7x+3| \leq -4.5$$

$$7x+3 \leq -4.5 \text{ and } 7x+3 \geq 4.5$$

$$7x \leq -7.5 \quad 7x \geq 1.5$$

$$x \leq -1.0714...$$

$$x \geq 0.214285...$$

