

Unit 8 Solving Equations & Inequalities

8.7 Solving Multi-Step Inequalities (text 9.3)

Same as solving multi-step equations.

Remember to reverse (flip) the inequality IF you multiply or divide by a negative number.

Ex. Solve, show solution algebraically and graphically:

a) $\frac{x}{4} + 3 > 8$

$$\frac{x}{4} + 3 > 8$$

$$\frac{x}{4} > 5$$

$$\frac{x}{4} > 5$$

$$x > 20$$



$$\frac{x}{4} + 3 > 8$$

$$\frac{x}{4} > 5$$

$$\frac{x}{4} > 5$$

$$\frac{x}{4} > 5$$

$$\frac{x}{4} > 5$$

$$x > 20$$

b) $-2(x + 3) \leq 10x + 18$

$$-2x - 6 \leq 10x + 18$$

$$-10x - 6 \leq 10x + 18$$

$$-10x - 6 \leq 10x + 18$$

$$-12x \leq 24$$

$$-12x \leq 24$$

$$x \geq -2$$



Ex. Sarah has two job offers selling electronics.

Job A: \$55 per day plus 3% commission on sales

Job B: \$40 per day plus 5% commission on sales

What value of sales does Sarah need to make daily for Job B to be the better job?

let x = value of daily sales

$$\text{Job B pay} > \text{Job A pay}$$

$$0.05x + 40 > 0.03x + 55$$

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$$0.02x > 15$$

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$$x > 750$$

Job B is better if she expects to sell more than \$750 each day ✓