6.3 Writing and Solving Inequalities with Variables on Both Sides

Key Concept:

Solve inequalities the same way you do regular equations.

Your goal is to solve for the variable. To do this you bring all of the variable terms to the same side of the equation then move everything else to the other side.

If you multiply or divide by a negative, you must flip the inequality sign

Part One: Solve

Example:

Solve the inequality for n:

$$-2n - 9.8 \geq \frac{1}{2}n + 1.3$$

Example:

Solve the inequality for x:

$$3x + 4.7 < -1.5x + 6.5$$

Part Two: Writing an Inequality

Example: Write and inequality to represent the situation than solve

At a lake it costs $9 per hour to rent a paddleboat. It costs $6.50 per hour to rent a kayak. You have a coupon for a $5 discount on the cost of renting a paddleboat. After how many hours would it cost more to rent a paddleboat than to rent a kayak?

Example: Write an inequality to represent the situation than solve

A rose bush is 4.5 inches tall and grows 0.75 inches per week. A sunflower is 3 inches tall and grows 1 inch per week.