

Section 1.3: Solving Linear Equations

Goal: Solve linear equations and use linear equations to answer questions about real-life situations.

Solving Linear Equations

- Isolate or get the variable by itself.
- Work backwards.
- Use opposite operations.

Examples: Solve each equation.

1. $4x - 2x = 15 - 3x$

2. $15(4 - y) = 5(10 + 2y)$

3. $\frac{2}{3}x + \frac{3}{5} = \frac{4}{15}$

Section 1.6: Solving Linear Inequalities

Goal #1: Solve simple inequalities.

ISOLATE THE VARIABLE!

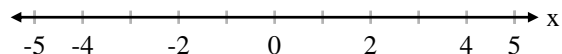
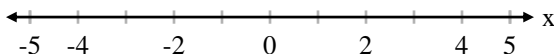
Reminder: Reverse inequality symbol if you

1. Multiply or divide both sides by _____.
2. Rewrite the _____ of the inequality statement

Examples: Solve and graph each inequality.

1. $-5 < 2x - 13$

2. $-5x + 9 \geq 2(x - 6)$



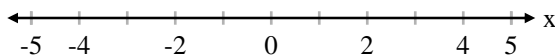
Goal #2: Solve compound inequalities.

A **compound inequality** is two simple inequalities joined by _____ or _____.

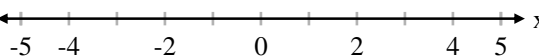
Graphing Compound Inequalities

Examples: Graph each compound inequality.

1. $x < -3$ or $x > 1$



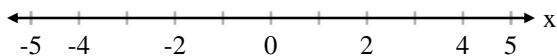
2. $x \geq -4$ and $x \leq 3$



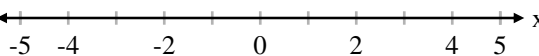
Solving and Graphing Compound Inequalities

Examples: Solve and graph each compound inequality.

1. $-2x + 7 < 3$ or $3x + 2 < 2$



2. $-12 \leq 3x - 3 \leq 12$



Now you try it! Complete the following and be prepared to share your results.

1. Solve the equation:

$$\frac{1}{3}(2x+6) = 4 - 3x$$

2. Solve and graph the compound inequality.

$$\frac{2}{3}x + 1 < -1 \text{ or } -2x + 3 \leq 1$$

