# Solving Linear and Absolute Value Inequalities

<u>Linear Inequalities</u>
Step1: Remove parentheses by using the Distributive Property.
Step 2: Combine like terms.
Step 3: Isolate the variable.

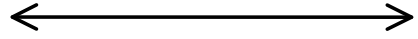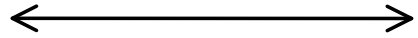1. Solve each inequality and graph the solution.

a) $-(a+1)-4a \le 2a-8$

$\longleftrightarrow$

b) $4 < 6 + \dfrac{2}{3}x < 8$

$\longleftrightarrow$

c) $-16 \leq 4 - 2x \leq 13$

d) $3x - 1 < 2x + 4$ or $5x - 2 > 3x + 4$
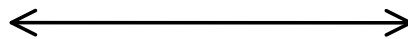
Absolute Value Inequalities

Step 1: Isolate the absolute value.

Step 2: Set up two inequalities.  One inequality is equal to the positive value and the other  is equal to the negative value with the inequality symbol reversed.
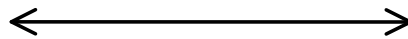
Step 3: Solve both inequalities.

2.  Solve each inequality and graph the solution.

a)  $|3t - 7| \geq 23$

$\longleftarrow\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\longrightarrow$

b)  $|6x - 1| - 4 < 2$

$\longleftarrow\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\longrightarrow$

c)  $|3x - 8| + 11 < 6$

$\longleftarrow\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\longrightarrow$