

Graph and solve a
compound
inequality with

AND

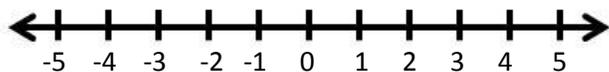
Graph and solve a
compound
inequality with

OR

Write and Graph Compound Inequalities with AND

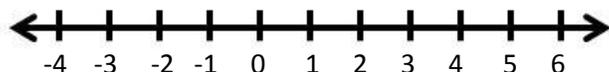
Example 1:

All real numbers that are greater than -3 and less than 2



You Try:

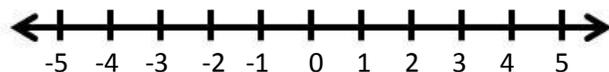
All real numbers that are greater than or equal to -1 and less than 4



Solve a Compound inequality with AND

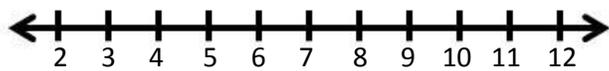
Example 3:

Solve $-8 < x - 5 \leq -2$. Graph the solution.



You Try:

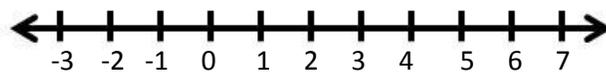
Solve $10 \leq 2x + 4 \leq 24$. Graph the solution.



Write and Graph Compound Inequalities with OR

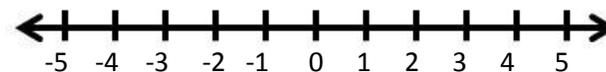
Example 2:

All real numbers that are less than 0 or greater than or equal to 5



You Try:

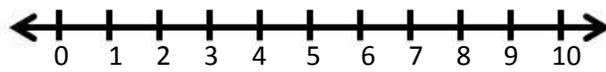
All real numbers that are less than -2 or greater than or equal to 2



Solve a Compound inequality with OR

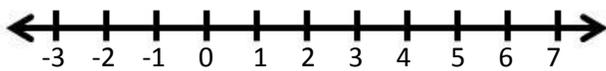
Example 4:

Solve $2x + 3 < 9$ or $-3x - 6 < -24$. Graph the solution.



You Try:

Solve $4x + 1 \leq -3$ or $5x - 3 > 17$. Graph the solution.



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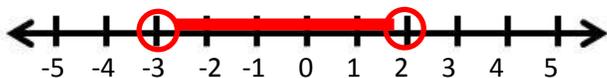
Write and Graph Compound Inequalities with AND

Example 1:

All real numbers that are greater than -3 and less than 2

$$x > -3 \text{ and } x < 2$$

$$-3 < x < 2$$

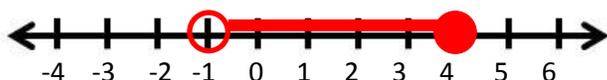


You Try:

All real numbers that are greater than or equal to -1 and less than 4

$$x \geq -1 \text{ and } x < 4$$

$$-1 \leq x < 4$$



Solve a Compound inequality with AND

Example 3:

Solve $-8 < x - 5 \leq -2$. Graph the solution.

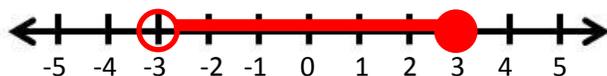
$$-8 < x - 5 \text{ and } x - 5 \leq -2$$

$$\begin{array}{r} +5 \quad +5 \\ \hline -3 < x \end{array} \quad \begin{array}{r} +5 \quad +5 \\ \hline x \leq 3 \end{array}$$

$$-3 < x$$

$$x \leq 3$$

$$x > -3 \text{ and } x \leq 3$$



You Try:

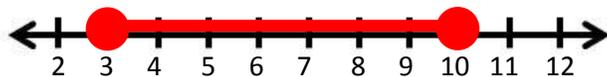
Solve $10 \leq 2x + 4 \leq 24$. Graph the solution.

$$10 \leq 2x + 4 \text{ and } 2x + 4 \leq 24$$

$$\begin{array}{r} -4 \quad -4 \\ \hline 6 \leq 2x \end{array} \quad \begin{array}{r} -4 \quad -4 \\ \hline 2x \leq 20 \end{array}$$

$$\frac{6}{2} \leq \frac{2x}{2} \quad \text{and} \quad \frac{2x}{2} \leq \frac{20}{2}$$

$$3 \leq x \quad \text{and} \quad x \leq 10$$

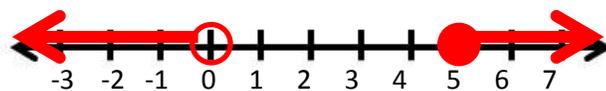


Write and Graph Compound Inequalities with OR

Example 2:

All real numbers that are less than 0 or greater than or equal to 5

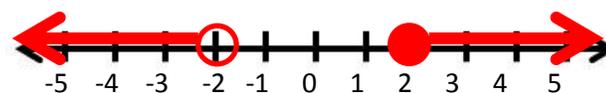
$$x < 0 \text{ or } x \geq 5$$



You Try:

All real numbers that are less than -2 or greater than or equal to 2

$$x < -2 \text{ or } x \geq 2$$



Solve a Compound inequality with OR

Example 4:

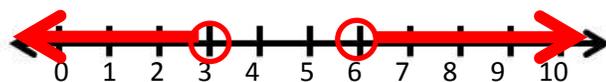
Solve $2x + 3 < 9$ or $-3x - 6 < -24$. Graph the solution.

$$2x + 3 < 9 \quad \text{or} \quad -3x - 6 < -24$$

$$\begin{array}{r} -3 \quad -3 \\ \hline 2x < 6 \end{array} \quad \begin{array}{r} +6 \quad +6 \\ \hline -3x < -18 \end{array}$$

$$\frac{2x}{2} < \frac{6}{2} \quad \text{or} \quad \frac{-3x}{-3} < \frac{-18}{-3}$$

$$x < 3 \quad \text{or} \quad x > 6$$



You Try:

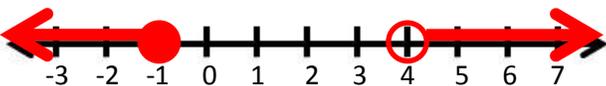
Solve $4x + 1 \leq -3$ or $5x - 3 > 17$. Graph the solution.

$$4x + 1 \leq -3 \quad \text{or} \quad 5x - 3 > 17$$

$$\begin{array}{r} -1 \quad -1 \\ \hline 4x \leq -4 \end{array} \quad \begin{array}{r} +3 \quad +3 \\ \hline 5x > 20 \end{array}$$

$$\frac{4x}{4} \leq \frac{-4}{4} \quad \text{or} \quad \frac{5x}{5} > \frac{20}{5}$$

$$x \leq -1 \quad \text{or} \quad x > 4$$



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Directions

Step 1: Photocopy pages 1 & 2 front to back (flip along the short edge)

Step 2: Fold in half and cut between the two rectangles making two flaps.

The final product should look like this:

