

Solve & Graph Compound Inequalities

1. Solve each compound inequality for x , and graph the solution on a number line.

a) $x + 6 < 8$ and $x - 1 > -1$

b) $-1 \leq 3 - 2x \leq 10$

c) $5x + 1 < 0$ or $8 \leq x - 5$

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a) $x + 6 < 8$ and $x - 1 > -1$

$$x < 2 \text{ and } x > 0$$

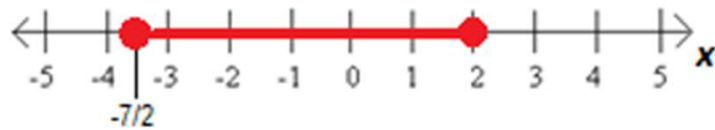
$$\rightarrow 0 < x < 2$$



b) $-1 \leq 3 - 2x \leq 10$

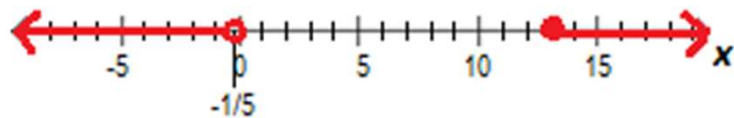
$$x \geq -\frac{7}{2} \text{ and } x \leq 2$$

$$\rightarrow -\frac{7}{2} \leq x \leq 2$$



c) $5x + 1 < 0$ or $8 \leq x - 5$

$$x < -\frac{1}{5} \text{ or } x \geq 13$$



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