

Algebra

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Solve the following inequalities:

a.) $5x - 2(x - 15) < 10$

b.) $5x - \frac{1}{2}(3x + 8) \leq -4 + 3x$

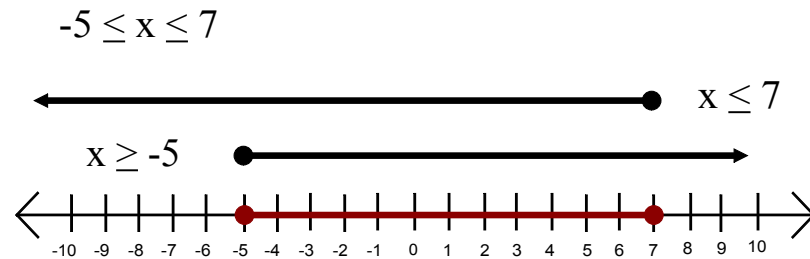
c.) $2x - 3(x + 3) \leq 14$

Sec. 3-5

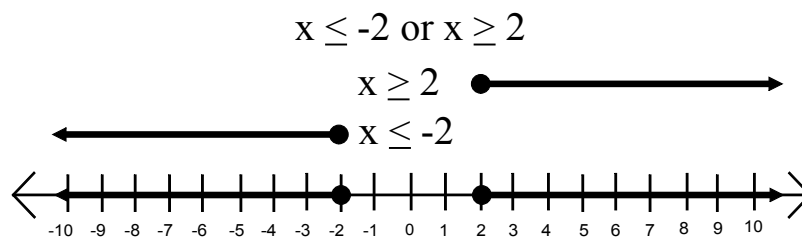
Compound Ineq.

We can combine two inequalities into a "compound inequality" using the words "and" or "or".

$$x \geq -5 \text{ and } x \leq 7$$

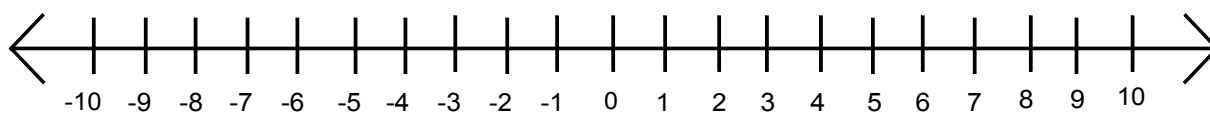


When you graph an "and" compound inequality, the solution is where both graphs overlap (where both are true). When you graph an "or" inequality, the solution is both lines (where either is true).

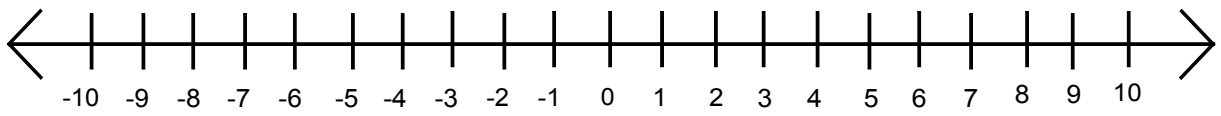


This also means that an "and" inequality will have one line on the number line and an "or" inequality will have two lines on the number line.

Solving a compound inequality is easy, just break it into two inequalities and solve both...



$$-4 < x - 5 \leq -1$$



$$4x + 3 < -5 \text{ or } -2x + 7 < 1$$

Pg. 163, #2 - 32 (e)