

12.7 Solving 2-Step Inequalities

p. 704 2-5-18

Feb 13-8:11 AM

When you solve two-step equations, you can use the order of operations in reverse to isolate the variable. You can use the same process when solving two-step inequalities.

Remember!

Draw a closed circle when the inequality includes the point and an open circle when it does not include the point.

Feb 13-8:10 AM

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Follow order of operations backwards!

Feb 3-9:36 AM

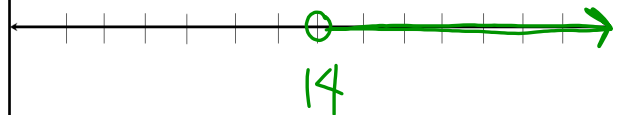
Solve. Then graph the solution set on a number line.

$$\frac{y}{2} - 6 > 1$$

$$\frac{y}{2} - 6 + 6 > 1 + 6$$

$$\frac{y}{2} > 7$$

$$2 \cdot \frac{y}{2} > 7 \cdot 2 \quad y > 14$$



Feb 13-8:12 AM

Solve. Then graph the solution on a number line.

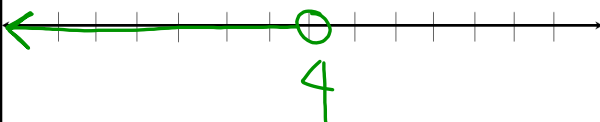
$$4y - 5 < 11$$

$$4y - 5 + 5 < 11 + 5$$

$$4y < 16$$

$$\frac{4y}{4} < \frac{16}{4}$$

$$y < 4$$



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Solve. Then graph the solution set on a number line.

$$-4 \geq -3x + 5$$

$$-4 - 5 \geq -3x + 5 - 5$$

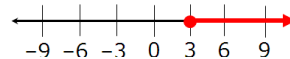
$$-9 \geq -3x$$

$$\frac{-9}{-3} \leq \frac{-3x}{-3}$$

$$x \geq 3$$

Subtract 5 from both sides.

Divide both sides by -3, and reverse the inequality symbol.



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$$\begin{array}{r} -4 \geq -3x + 5 \\ -5 \quad -5 \\ \hline -9 \geq -3x \\ -3 \quad -3 \\ \hline 3 \leq x \end{array} \quad x \geq 3$$

Feb 3-9:40 AM

Solve. Then graph the solution set on a number line.

$$\begin{array}{r} \frac{h}{7} + 1 > -1 \\ -1 \quad -1 \\ \hline 7 \cdot \frac{h}{7} > -2 \cdot 7 \\ h > -14 \end{array}$$

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Solve. Then graph the solution set on a number line.

$$\begin{array}{r} \frac{m}{-2} + 1 \geq 7 \\ -2 \quad -1 \quad -1 \\ \hline (-2) \frac{m}{-2} \geq 6(-2) \\ m \leq -12 \end{array}$$

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Solve. Then graph the solution on a number line.

$$\begin{array}{r} 2y - 4 > -12 \\ +4 \quad +4 \\ \hline 2y > -8 \\ \frac{2y}{2} > \frac{-8}{2} \\ y > -4 \end{array}$$

Mar 10-8:40 AM

Solve. Then graph the solution set on a number line.

D. $-9x + 4 \leq 31$

$$\begin{array}{r} -4 \quad -4 \\ \hline -9x \leq 27 \\ -9 \quad -9 \\ \hline x \geq -3 \end{array}$$

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Solve. Then graph each solution set on a number line.

$s > -7$

- $7s + 14 > -35$

$$\begin{array}{r} -14 \quad -14 \\ \hline 7s > -49 \\ \frac{7s}{7} > \frac{-49}{7} \\ s > -7 \end{array}$$
- $\frac{y}{-8} + 12 > 20$

$$\begin{array}{r} -7 \quad -7 \\ \hline \frac{y}{-8} > 8 \\ (-8) \frac{y}{-8} > 8(-8) \\ y < -64 \end{array}$$
- $18n - 22 \leq 32$

$$\begin{array}{r} +22 \quad +22 \\ \hline 18n \leq 54 \\ \frac{18n}{18} \leq \frac{54}{18} \\ n \leq 3 \end{array}$$

Mar 10-8:41 AM