

Warm-Up

February 23, 2016

Remember this???

$$-3(4v + 6) = v - 17$$

$$-12v - 18 = v - 17$$

$$-12v - v - 18 = \boxed{v - v} - 17$$

$$-13v - 18 = -17$$

$$-13v \boxed{-18 + 18} = -17 + 18$$

$$\frac{-13v}{-13} = \frac{1}{-13}$$



$$v = -\frac{1}{13}$$

$$\frac{-13v}{-13} < \frac{1}{-13}$$

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Section 6.5 Solving Linear Inequalities by Using Multiplication and Division

Multiply each side by 2

$$\begin{array}{l} (-2) \quad (-2) \\ -4 < 2 \\ -8 < 4 \text{ yes} \end{array}$$

Divide each side by 2

$$\begin{array}{l} -4 < 2 \\ \hline 2 \quad 2 \\ -2 < 1 \text{ yes} \end{array}$$

Multiply each side by -2

$$\begin{array}{l} (-2) \quad (-2) \\ -4 < 2 \\ 8 < -4 \quad \text{NO} \\ \uparrow \text{Reverse} \\ 8 > -4 \quad \text{True} \end{array}$$

Divide each side by -2

$$\begin{array}{l} -4 < 2 \\ \hline -2 \quad -2 \\ 2 < -1 \quad \text{No} \\ \downarrow \leftarrow \text{Reverse} \\ 2 > -1 \end{array}$$

* When multiplying or dividing by a negative number in the last step of solving inequality you must Reverse the sign to make the inequality true

A.
$$\frac{-5x}{-5} < \frac{25}{-5}$$

$$x > -5$$
 Annotations: $\frac{-5(4)}{-5}$, $\frac{-20}{-5}$, $4 < 25$

B.
$$\frac{7a}{7} \leq \frac{-21}{7}$$

$$a \leq -3$$

C)
$$\frac{4x}{4} \leq \frac{28}{4}$$

$$x \leq 7$$

D)
$$42 \leq -6x$$

$$\frac{-6x}{-6} \geq \frac{42}{-6}$$

$$x \leq -7$$

$$-2(3 - 1.5n) < 4(2 - n)$$

Solve
Graph

$$-6 + 3n < 8 - 4n$$

$$-6 + 3n + 4n < 8 - 4n + 4n$$

$$-6 + 7n < 8$$

$$-6 + 6 + 7n < 8 + 6$$

$$\frac{7n}{7} < \frac{14}{7}$$

$$n < 2$$



$$-6(2 + 6x) > 12 + 2x$$

Solve
Graph

$$-12 - 36x > 12 + 2x$$

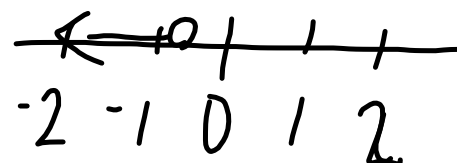
$$-12 - 36x - 2x > 12 \quad (+2x - 2x)$$

$$-12 - 38x > 12$$

$$\boxed{-12 + 12} - 38x > 12 + 12$$

$$\begin{array}{r} -38x > 24 \\ \hline -38 & -38 \\ \hline x < \frac{-24}{38} \end{array}$$

← Last step



$$x < -0.6$$

Remember Eliminate Fractions by Multiplying all Fractions by the LCM

$$\overset{(70)}{\frac{1}{2}} + \overset{(70)}{\frac{-4}{7}}p > \overset{(70)}{\frac{13}{10}}$$

$$\frac{70}{2} + \frac{-280}{7}p > 910$$

$$35 + -40p > 91$$

$$\boxed{35-35} - 40p > 91 \quad 35$$

$$\frac{-40p}{\textcircled{-40}} > \frac{56}{-40}$$

$$p < -1.4$$



$$(12) \frac{2}{3} (x-4) \leq \frac{3}{4} (-2x+5)$$

$$\frac{24}{3} (x-4) < \frac{36}{4} (-2x+5)$$

$$8(x-4) < 9(-2x+5)$$

$$8x - 32 < -18x + 45$$

$$8x + 18x - 32 < \boxed{-18x + 18x} + 45$$

$$26x - 32 < 45$$

$$26x \boxed{-32 + 32} < 45 + 32$$

$$\frac{26x}{26} < \frac{77}{26} \quad x < \frac{77}{26}$$



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3 all

a) $-9^{(4)} < -2^{(4)}$, Multiply by 4
 $-36 < -8$ *yes*

- 9 [a,c,e]
 - 11 [a,c]
 - 12 [a,c]
 - 13
 - 17 [b]
- } Solve Graph