

Day 31 10/9 Warm-Ups: Txbk p.212 (1-8) at the top

Check Skills You'll Need $2\frac{1}{5} = \frac{11}{5}$

Solve each equation.

1. $8 = \frac{1}{2}t$
 $\frac{2}{1} \cdot 8 = \frac{1}{2} \cdot t \cdot 2$
 $16 = t$

2. $14 = -21x$
 $\frac{14}{-21} = \frac{-21x}{-21}$
 $-\frac{2}{3} = x$

3. $\frac{x}{6} = -1$
 $\frac{x}{6} \cdot 6 = -1 \cdot 6$
 $x = -6$

Oct 8-6:00 AM

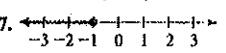
4. $\frac{5d}{5} = \frac{32}{5}$
 $d = 6.4$

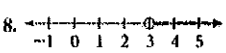
5. $\frac{3}{2}x = -12 \cdot \frac{3}{2}$
 $x = -18$
 ~~$x = 8$~~
 $-12 \cdot (3/2)$

6. $0.5n = 9$
 $\frac{0.5n}{0.5} = \frac{9}{0.5}$
 $n = 18$

Oct 8-6:04 AM

Write an inequality for each graph.

7. 
 $9 \leq -1$

8. 
 $N > 3$

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Lesson 4-4 10/9 Day 31 Solving Multi-Step Inequalities

<p>Lesson Objectives</p> <ul style="list-style-type: none"> Solve multi-step inequalities with variables on one side Solve multi-step inequalities with variables on both sides 	<p>NAEP 2005 Strand: Algebra</p> <p>Topics: Equations and Inequalities</p> <p>Local Standards:</p>
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P.74

Oct 8-6:06 AM

Example

1 Using More Than One Step Solve $5 + 4b < 21$. ✓

$5 + 4b - \square < 21 - \square$ Subtract \square from each side.

$5 + 4b < 21$
 $-5 \quad -5$

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

$b < 4$

$5 + 4b = 21$
 $5 + 4 \cdot 4 = 21$
 $5 + 16 = 21$ ✓

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Quick Check

Solve each inequality. Check your solutions. Rewrite

1. a. $-3x - 4 \leq 14$ b. $5 \leq 7 - 2t$

$-3x - 4 \leq 14$
 $+4 \quad +4$
 $-3x \leq 18$
 $-3 \quad -3$
 $x \geq -6$

$5 \leq 7 - 2t$
 $-7 \quad -7$
 $-2t \geq -2$
 $\frac{-2t}{-2} \geq \frac{-2}{-2}$
 $t \leq 1$

\div by #
 a neg. #
 Flip your sign

Oct 8-6:07 AM

c. $-8 < 5n - 23$

$5n - 23 > -8$
 $+23 \quad +23$

$5n > 15$
 $\frac{5n}{5} > \frac{15}{5}$

$n > 3$

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2 Using the Distributive Property Solve $3x + 4(6 - x) < 2$.

$3x + 4(6 - x) < 2$
 $3x + 4 \cdot 6 - 4 \cdot x < 2$ distribute
 $3x + 24 - 4x < 2$
 $-1x + 24 < 2$
 $-24 \quad -24$
 $-1x < -22$
 $\frac{-1x}{-1} < \frac{-22}{-1}$
 $x > 22$

Oct 8-6:07 AM

3 Multi-Step Inequalities Solve $5(-3 + d) \leq 3(3d - 2)$.

$$5(-3 + d) \leq 3(3d - 2)$$

$$5(-3) + 5d \leq 3 \cdot 3d - 3 \cdot 2$$

$$\begin{array}{r} -15 + 5d \leq 9d - 6 \\ -9d \quad -9d \end{array}$$

$$\begin{array}{r} -15 - 4d \leq -6 \\ +15 \quad +15 \end{array}$$

$$\begin{array}{r} -4d \leq 9 \\ -4 \quad -4 \end{array}$$

$$d \geq -\frac{9}{4}$$

move
letters
to
the
left

Oct 8-6:08 AM

Quick Check

2. a. $4p + 2(p + 7) < 8$

$$4p + 2p + 14 < 8$$

$$6p + 14 < 8$$

$$\begin{array}{r} -14 \quad -14 \\ 6p < -6 \end{array}$$

$$\frac{6p}{6} < \frac{-6}{6} \quad |p < -1$$

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b. $15 \leq 5 - 2(4m + 7)$

$$5 - 2(4m + 7) \geq 15$$

$$\begin{array}{r} 5 - 2(4m) + 2(7) \\ 5 - 8m + 14 \geq 15 \end{array}$$

$$\begin{array}{r} -9 - 8m \geq 15 \\ +9 \quad +9 \end{array}$$

$$\begin{array}{r} -8m \geq 24 \\ -8 \quad -8 \end{array}$$

$$m < -3$$

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3. Solve each inequality. Check your solutions.

a. $3b + 12 > 27 - 2b$

$$3b + 12 > 27 - 2b$$

$$\begin{array}{r} -12 \quad -12 \\ 3b > 15 - 2b \\ +2b \quad +2b \end{array}$$

$$\frac{5b}{5} > \frac{15}{5}$$

$$b > 3$$

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b. $-6(x-4) \geq 7(2x-3)$

$$-6(x-4) \geq 7(2x-3)$$

$$-6x + (+24) \geq 14x - 21$$

$$\begin{array}{r} -14x \qquad -14x \\ -20x + 24 \geq -21 \\ \quad -24 \quad -24 \\ \hline -20x \geq -45 \\ \quad -20 \quad -20 \\ \hline x \leq 2\frac{1}{4} \\ x \leq \frac{9}{4} \end{array}$$

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CW: WkBk p.309 - 4.4 Wkst (1st column, omit 21 - 23)

Oct 8-6:03 AM