

## Math 7H - Unit 2c

## Day 6 - Solving Two-Step Inequalities

## Lesson Objectives:

- I can solve two-step inequalities.
- I know how to show work when solving inequalities.

Solve each inequality. Don't forget to show work, give properties as reasons, and graph your solution on a number line.

1.  $3x + 4 \leq 31$

$$\begin{array}{r} -4 -4 \\ 3x \leq 27 \\ \frac{3x}{3} \leq \frac{27}{3} \\ x \leq 9 \end{array}$$

Subtraction Prop(=) Division Prop(=)

2.  $7 - 2a \leq 23$

$$\begin{array}{r} -7 -7 \\ -2a \leq 16 \\ \frac{-2a}{-2} \geq \frac{16}{-2} \\ a \geq -8 \end{array}$$

Subtraction Prop(=) Division Prop(=)

Dante's telephone company charges \$10 a month plus \$0.05 for every minute or part of a minute. He wants his monthly bill to be under \$30. What is the greatest number of minutes he can talk?



Let  $x = \#$  of minutes

$$\begin{array}{r} 0.05x + 10 < 30 \\ -10 -10 \\ 0.05x < 20 \\ \frac{0.05x}{0.05} < \frac{20}{0.05} \\ x < 400 \text{ minutes} \end{array}$$

Subtraction Prop(=) Division Prop(=)

Steps for Solving Equations/Inequalities

Step #0 Simplify each side of the equation.

Step #1 Get rid of the constant

Step #2 Get rid of the coefficient

\*\*Keep the inequality symbol the same unless multiplying or dividing both sides of the inequality by a NEGATIVE number.

Solve each inequality. Don't forget to show work, give properties as reasons, and graph your solution on a number line.

3.  $\frac{x}{2} - 1 \geq 5$

$$\begin{array}{r} +1 +1 \\ \frac{x}{2} \geq 6 \\ 2 \cdot \frac{x}{2} \geq 2 \cdot 6 \\ x \geq 12 \end{array}$$

Addition Prop(=) Multiplication Prop(=)

4.  $1 < -\frac{x}{3} + 1$

$$\begin{array}{r} -1 -1 \\ -\frac{x}{3} < 0 \\ 3 \cdot -\frac{x}{3} > 3 \cdot 0 \\ -x > 0 \\ 0 > x \\ x < 0 \end{array}$$

Subtraction Prop(=) Multiplication Prop(=)

Homework

## Solving Two-Step Inequalities WKS

\* Individual Think Time \*



What to do if you get stuck...

1. Reread the problem. Did you write it down correctly?
2. Reread your notes. Is there a problem similar that we did together in class?
3. Find a problem similar in your book. Try this one to see if it helps.
4. Skip the problem until the end of Individual Think Time. Then ask an "educated" question of a neighbor or Mrs. Call.

Today we're working by...

