

Math 7H - Unit 2c

Day 3 - Solving Inequalities by Multiplying or Dividing

Lesson Objectives:

- I can solve one-step inequalities by multiplying.
- I can solve one-step inequalities by dividing.
- I know how to show work when solving inequalities.

Multiplication Property of Inequality: You can multiply the same number to both sides of an inequality, and the statement will remain true.

For all numbers a , b , and c , where $c > 0$,
if $a < b$ or $a > b$, then $ac < bc$ or $ac > bc$.

Division Property of Inequality: You can divide the same number from both sides of an inequality, and the statement will remain true.

For all numbers a , b , and c , where $c > 0$
If $a < b$ or $a > b$ and $c \neq 0$, then $a \div c < b \div c$ or $a \div c > b \div c$.

These properties are also true ~~from~~ ^{for} $a \leq b$ and $a \geq b$.

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

1. $\frac{9}{9}x \leq \frac{54}{9}$ Division Prop (\neq)
 $x \leq 6$

2. $\frac{d}{9} > 4 \cdot 9$ Multiplication Prop (\neq)
 $d > 36$

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

3. $\frac{n}{5} \leq 0.8$ Multiplication Prop (\neq)
 $n \leq 4$

4. $0.6n \geq 0.48$ division Prop (\neq)
 $n \geq .8$

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

5. $\frac{3}{2}x \geq 7 \cdot \frac{3}{2}$ multiplication prop (\neq)
 $x \geq \frac{21}{2}$

6. $\frac{7}{9}k > -\frac{5}{12}$ division Prop (\neq)
 $k > -\frac{45}{84} = -\frac{15}{28}$

Julia delivers pizzas on weekends. Her average tip is \$1.50 for each pizza that she delivers. How many pizzas must she deliver to earn at least \$20 in tips?



Let X = # of pizza delivered

$$\frac{1.50x}{1.50} = \frac{20.00}{1.50} \text{ Division Prop } (\neq)$$

$$x \geq 13.\bar{3}$$

$x \geq 14$ pizzas

Homework

Solving Inequalities by Multiplying & Dividing 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...

