Math 7H - Unit 2c

Day 2 - Solving Inequalities by Adding or Subtracting

Lesson Objectives:

- I can solve an one-step inequalities by adding.
- I can solve an one-step inequalities by subtracting.
- I know how to show work when solving inequalities.

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

If $a < b$ or $a > b$, then $a + c < b + c$ or $a + c > b + c$.

Addition Prop (≠)

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

If $a < b$ or $a > b$, then $a - c < b - c$ or $a - c > b - c$.

Subtraction Prop (≠)

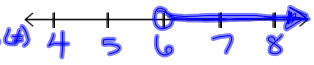
These properties are also true from $a \leq b$ and $a \geq b$.

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

1. $y + 5 > 11$

$-5 \quad -5$

$y > 6$ Subtraction Prop (≠)

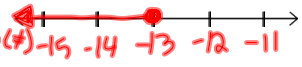


2. $-21 \geq d - 8$

$+8 \quad +8$ Addition Prop (≠)

$-13 \geq d$

$d \leq -13$



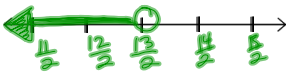
Solve each inequality. Don't forget to show work, give properties as reasons, and graph your solution on a number line.

3. $h - \frac{3}{2} < 5$

$h - \frac{3}{2} < \frac{10}{2}$

$+\frac{3}{2} \quad +\frac{3}{2}$ Addition Prop (≠)

$h < 6\frac{1}{2}$



4. $f + 3\frac{1}{2} > 3$

$-3\frac{1}{2} \quad -3\frac{1}{2}$ Subtraction Prop (≠)

$f > -\frac{1}{2}$

$f + 3\frac{1}{2}$

$-5 + 3\frac{1}{2}$

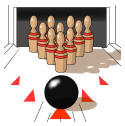
$-1\frac{1}{2} > 3$ ☹

$f + 3\frac{1}{2}$

$2 + 3\frac{1}{2}$

$5\frac{1}{2} > 3$ ☺

Katya has $12 to take to the bowling alley. If the shoe rental costs $3.75, what is the most she can spend on games and snacks?



x = $ spent on games & snacks

$x + 3.75 \leq 12.00$

Subtraction Prop (≠) $-3.75 \quad -3.75$

$x \leq \$8.25$

$0 \leq x \leq \$8.25$

$[0, 8.25]$

Homework

Solving Inequalities by Adding & Subtracting 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...