6.3 Notes

Monday, April 4, 2016   8:35 AM

CHAPTER 6 NOTES – Linear Inequalities

6.3 – Introduction to Linear Inequalities
6.4 – Solving Linear Inequalities by Using Addition and Subtraction
6.5 – Solving Linear Inequalities by Using Multiplication and Division

What You'll Learn:

6.3/6.4/6.5 – Explain and illustrate strategies to solve linear inequalities.

What do each of the following signs mean?

a) $>$ greater than

b) $<$

c) $\geq$

d) $\leq$

Can you write an inequality for the amount of time, t, you are legally allowed to park according to the sign?

Math 9

Name_____ _____

6.3 – Introduction to Linear Inequalities

~~Do a, b, c, & d of the Investigate on the bottom of p.288, and compare with a classmate.~~

$>$ greater than $\geq$ greater than or equal to $)$

$<$ less than $\leq$ less than or equal to

ex1

Define a variable and write an inequality to describe each situation:

a) Your bank account balance has been above \$300 the whole year

m = money in your account.

$$m > 300$$

b) You must have 9 items or less to use the express checkout

i = grocercy items

$$i \leq 9$$

c) Contest entrants must be at least 13 years old

C = contest entrants age

$$c \geq 13$$

d) Tiger Woods shot below -1 every day of the tournament

t = Tigers' score

$$t < -1$$

What is different about an inequality compared to an equation?

- an inequality has many solutions as it defines a range.
(ex) x > 2 : solutions 3, 4, 5 ....etc.
- an equation has only one solution

ex2

Write the following inequalities. How you would say them, then give 2 possible solutions:

a) $x > 2$ x is greater than 2   : 2.1, 99

b) $x \leq 7$ x is less than or equal to 7 ; 6, -2, 7

c) $x < -9$ x is less than -9   : -10, -70

d) $-3 \geq x$ -3 is greater than or equal to x
OR
$x \leq -3$ x is less than or equal to -3   } -4, -3

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ex3

Is each number a solution of the inequality $y \geq -3$?

a) -4   NO

b) 4   yes

c) -2.5   yes

d) 0   yes

e) -3   yes

How can you illustrate solutions to an inequality?

graphing on a number line.

What are the guidelines to graphing on a number line?

- set up a number line with a target number in the middle.
- if > or < use O on your target number.
- if ≥ or ≤ use ● on your target number
- if > or ≥ use right arrow ———→
    < or ≤ use left arrow ←———

ex4

Graph each inequality on a number line and write two possible solutions:

a) $m < -1$

open dot
left arrow

-3 -2 -1 0 1 2 3

-3, -1.5

b) $0.5 > p$

$p < 0.5$
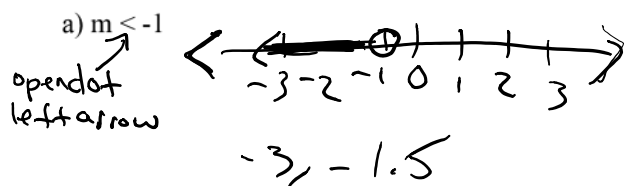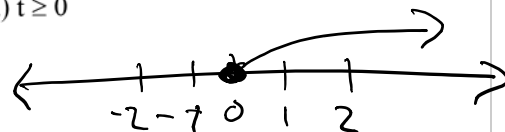
c) $w \leq -3.5$

closed dot,
left arrow

-5.5 -4.5 -3.5 -2.5

YOU TRY

d) $t \geq 0$

-2 -1 0 1 2
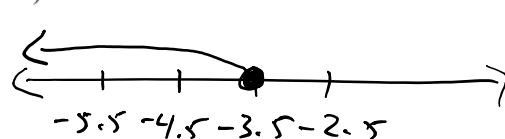
Reflection: An inequality can be described with words, symbols, or a graph. Which representation do you find easiest to understand? Explain why.

Assignment: p 292 #3aceg, 4, 5ace, 6bd, 8, 12, 13aceg