

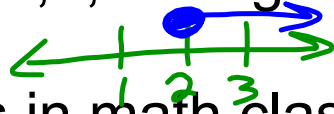
Do Now: Match the symbol with the word.

- | | | |
|-----------|--------------------------|-----------|
| _____ 1.) | less than | a. \geq |
| _____ 2.) | less than or equal to | b. $<$ |
| _____ 3.) | greater than | c. \leq |
| _____ 4.) | greater than or equal to | d. $>$ |

Do Now: (Do Not Copy, Just Answer)

$<$ \neq $>$ \geq

1. A cybercafe charges users a minimum fee of \$2 for internet access. Write an inequality to represent the access fee, f , then graph. $x \geq 2$



2. On the first two tests in math class. Collin had scores of 89 and 95 points. The third math test is tomorrow, and Collin's goal is to have a total score of 279 or higher on the three tests in order to have an A average for this quarter. What possible scores, s , can he have on the test tomorrow to attain his goal?

$$89 + 95 + x \geq 279$$

$$\begin{array}{r} 184 + x \geq 279 \\ -184 \quad -184 \\ \hline x \geq 95 \end{array}$$

$$x \geq 95$$

Grade of
95 or higher.

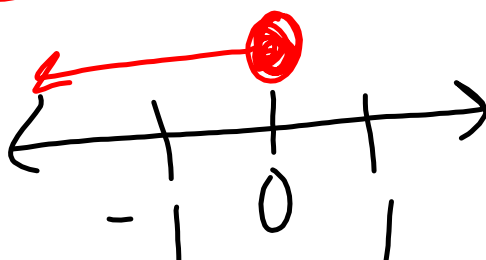
95, 96, 97, 98, 99, 100

16, 33, 31

$$\textcircled{31} \quad b + \cancel{2.5} \leq 2.5$$

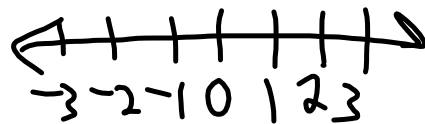
$\quad \quad \quad -2.5 \quad \quad \quad -2.5$

$$\textcircled{b \leq 0}$$



 $\textcircled{33}$

$$\textcircled{n \geq -411}$$



-410 ^{gas} ↑
-411 ————
-412 _{not a gas} ↓

Homework pg. 141 #12-16

12. The greatest weight that a forklift can raise is 2500 pounds.

$$f \leq 2500$$

13. The speed limit is 55 miles per hour.

$$s \leq 55$$

14. A truck can tow a maximum weight of 7700 pounds.

$$t \leq 7700$$

15. You must be at least 48 inches tall to ride the roller coaster.

$$u \geq 48$$

16. You can save up to \$50 on DVD players this week.

$$s \leq 50$$

\approx

\equiv Equation

3.5 Solving Inequalities

Using Multiplication or Division

equality

$$5x + 3 = 13$$

7.NS

7.EE

$>$ $<$ \geq \leq

- SWBAT solve inequalities using multiplication or division.
- SWBAT write a verbal sentence as an equation.
- SWBAT represent situations using algebraic symbols; analyze situations using algebraic symbols.

- Calculators: No

Multiplication Property of Inequality

Multiplying by a positive: keep the same inequality symbol

Multiplying by a negative: flip the inequality symbol

Solve the inequality.

Pos 6 KEEP

$$\frac{6}{1} \left(\frac{t}{6} \right) \geq (4) 6$$

$$t \geq 24$$

$$\frac{6}{1} \left(\frac{1}{6} t \right) \geq (4) 6$$

$$t \geq 24$$

Solve the inequality:

$$-\frac{m}{3} > 3$$

$$-\frac{m}{3} > 3$$

Mult. by a neg.

Neg. 3

~~3~~ ~~m~~ ~~>~~ ~~3~~ ~~(-3)~~

FLIP

$$m < -9$$

Divided by a neg.

$$-\frac{m}{3} > 3$$

~~3~~ ~~m~~ ~~>~~ ~~3~~

FLIP

$$m < -9$$

Solve the inequality:

$$-\frac{1}{8}n - 44 \geq -19$$

$+44$

$$-\frac{1}{8}n \geq 25$$

$\times 8$ (25) $\times (-8)$

FLIP \leftarrow

Mult. by neg \downarrow

$$n \leq -200$$

Solve the inequality:

1. $-\frac{k}{8} \geq 8$

$$k \leq -64$$

2. $-\frac{1}{2}f + 12 \leq 22$

$$f \geq -20$$

Division Property of Inequality

Dividing by a positive: keep the same inequality symbol

Dividing by a negative: flip the inequality symbol

Solve the inequality:

Divide by neg (FLIP)

$$\frac{-18y}{-18} < \frac{72}{-18}$$

$$y > -4$$

Solve the inequality.

$$-60 > -13 + 5a$$

$$\begin{array}{r} -13 + 5a < -60 \\ +13 \quad \quad \quad +13 \\ \hline \end{array}$$

$$\frac{5a}{5} < \frac{-47}{5}$$

$$a < \frac{-47}{5}$$

Solve the inequality.

1. $34 \leq -10t$

2. $-3t - 37 \leq -27$

An elevator can hold a maximum of 2000 pounds. The average weight of a person is 150 pounds. Let p be the number of people the elevator can hold.

a.) Write and solve an inequality involving multiplication that models the situation.

b.) What does the answer tell you about the number of people who can ride in the elevator?

Exit Pass 3.5

Explain the difference between the solutions of $2x > -14$ and $-2x > 14$.

"Don't blame the sea if you cannot catch a fish."

Working individually or with a partner, complete the workbook.

Workbook pg. 39 #5-12, 29, 30



Reflection of Today's Lesson

3.5 Solving Inequalities Using Multiplication or Division

7.NS

7.EE

- SWBAT solve inequalities using multiplication or division.
- SWBAT write a verbal sentence as an equation.
- SWBAT represent situations using algebraic symbols; analyze situations using algebraic symbols.

- **Calculators: No**

Homework

pg. 146 #13-27 odds, 28-38 evens

