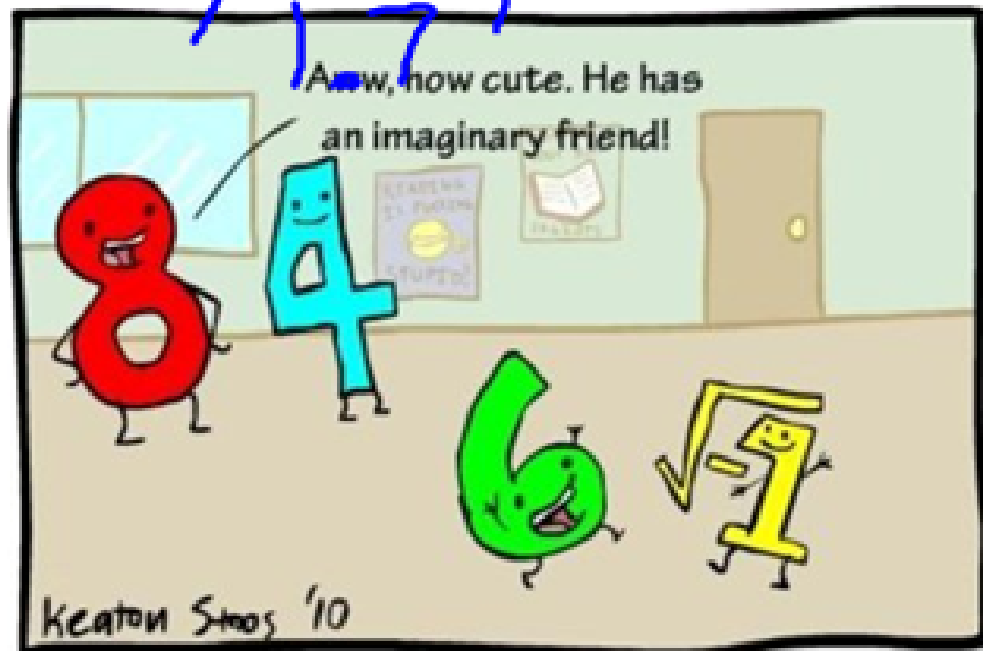


Warm-up!!

Order the following from least to greatest:

$\sqrt{3}, 1.5, 2^2, -2, -1.3$

$-2, -1.3, 1.5, \sqrt{3}, 2^2$



Interpreting EXPRESSIONS



Goals aligned to common core standards:

- You will break down an expression and interpret their parts.
- You will interpret the meaning of real world expressions and equations.

Interpreting Expression in the real world:

Suppose the cost of cell phone service including the data overages for a month is represented by the expression $2.40g + 75$.

What does the variable represent?

GB

What does the coefficient represent?

\$2.40 → price of GB overages

What does the constant represent?

\$75 → standard fee

A company uses two different sized trucks to deliver sand. The first truck can transport x cubic yards, and the second y cubic yards. The first truck makes S trips to a job site, while the second makes T trips. What do the following expressions represent in practical terms?

a. $S + T \rightarrow$ total amount of trips

b. $x + y \rightarrow$ total \uparrow ^{yds³} after each trip

c. $xS + yT \rightarrow$ everything they delivered so far

d. $\frac{xS + yT}{S + T} \rightarrow$ average amount of yd³ delivered in each trip

Solving Equations and Inequalities

One-Step

Goals aligned to common core standards:

- You will create and solve linear equations and inequalities.

Solving Equations

-To solve an equation means to find all values of the variable that make the equation a true statement.

-Isolate the variable.

-Check your answer!

Examples

$$\frac{\cancel{5}}{\cancel{2}} \cdot \frac{\cancel{2}}{\cancel{3}} x = \frac{8}{9} \cdot \frac{3}{2}$$

$$x = \frac{24}{18}$$

$$x = \frac{4}{3}$$

$$\frac{\cancel{7}}{1} \cdot \frac{3y}{\cancel{7}} = 9 \cdot \cancel{7}$$

$$3y = 63$$

$$y = 21$$

Solving Inequalities

-Solve the inequality the same as an equation.

However, there is one
rule!!!!!!!

When you multiply or divide both sides by a negative, you FLIP the inequality symbol.

Solving Inequalities

Why do you think the inequality sign has to be flip when multiplying and dividing both sides by a negative?

$$\begin{array}{r} 5 > 2 \\ \cdot -2 \quad \cdot -2 \\ \hline -10 < -4 \end{array}$$

Review of Symbols

$>$ greater than

$<$ less than

\geq greater than or equal to

\leq less than or equal to

Examples

$$22 \geq m - 8$$

$$+8 \quad +8$$

$$30 \geq m$$

$$m \leq 30$$

$$\frac{-7d}{-7} \leq \frac{147}{-7}$$

$$d \geq -21$$

$$\frac{4}{3} \cdot \frac{3}{4} y > \frac{12}{1} \cdot \frac{4}{3} = \frac{16}{1}$$

$$y > 16$$

Examples

$$-\frac{1}{6}x \leq -18$$

$-\frac{1}{6}$ $\frac{1}{6}$

$$x \geq 108$$

$$64 > \frac{4y}{4}$$

$$16 > y$$

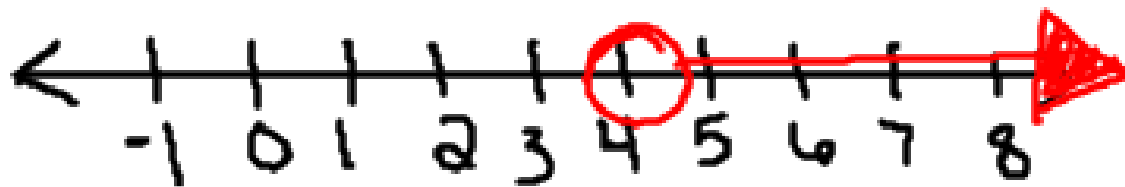
$$y < 16$$



How to graph linear inequalities?

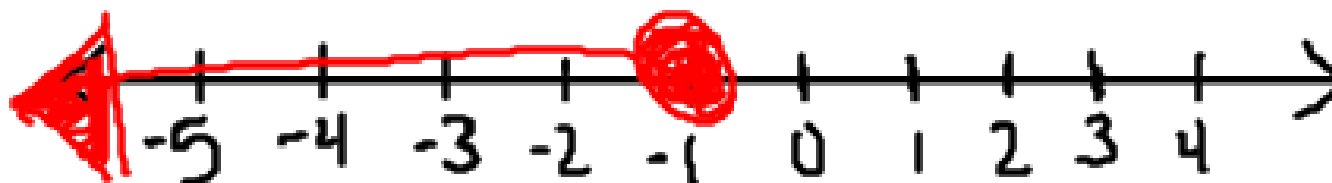
○ *Open circle: $>$ or $<$*

$$\text{Ex: } x > 4$$



● *Closed circle: \geq or \leq*

$$x \leq -1$$



$$-\frac{1}{6}x \leq -18$$

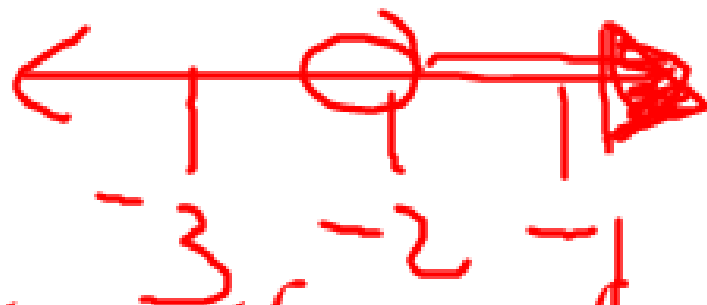
$$64 > 4y$$

$$16 > y$$
$$y < 16$$



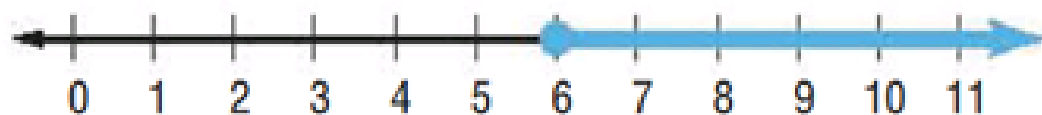
$$-5 + r > -7$$

$$r > -2$$



What are the graphs to these inequalities?

Write the Inequality for each graph...



$$x \geq 6$$



$$x < -5$$



$$x > 0$$

Things to remember.....

- 1. When you are graphing a $<$ or $>$, you use an _____.*
- 2. When you are graphing a \leq or \geq , you use a _____.*
- 3. When you are moving a negative number by multiplication, you _____ the _____.*

Goals aligned to common core standards:

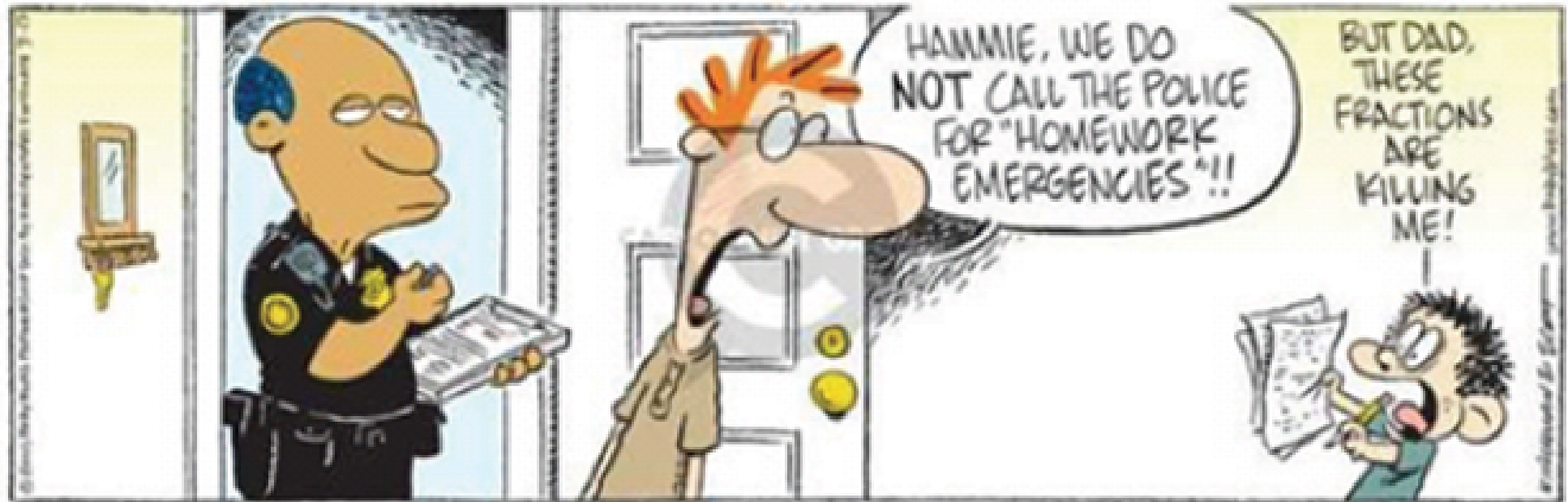
- You will create and solve linear equations and inequalities.
- You will justify your reasoning for operations that are computed.

Goals aligned to common core standards:

- You will break down an expression and interpret their parts.
- You will interpret the meaning of real world expressions and equations.

Classwork - Basic Budgeting

Due before you leave!!!!!!



Homework - Solving One Step EQ/IN wkst/ order of operations wkst

A.REI.1 Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.

***A.REI.3** Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.

***A.CED.1** Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions