Warm-up!!

A farmer had 17 sheep. All but nine died. How many does the farmer have left?

9

Divide 30 by 1/2 and add 10. What do you have??

$30 \cdot \frac{2}{1} = 60 + 10 = 70$

How much dirt can be removed from a hole that is 3 feet deep, 2 feet wide, and 10 feet long?

None

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.

Binomial expression:
$2x+1$

2 is a coefficient
x is a variable
1 is a constant
2 and x are factors
2x, and 1 are terms

Trinomial expression:
$3x^2+4x+6$

3 and 4 are coefficients
x is a variable
The 2 in x^2 is an exponent
6 is a constant
3 and x^2 are factors
4 and x are factors
$3x^2$, 4x, and 6 are terms

Now make your own expression and break down the parts.

$3x+2$

Interpreting Expression in the real world:

Suppose the cost of cell phone service for a month is represent by the expression 0.40s + 12.95.

What does the coefficient represent?

.40

What does the constant represent?

12.95

What does the variable represent?

s

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. $S + T$ total # of trips

b. $x + y$ total # of yd^3

c. $xS + yT$

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.

Solving Equations and Inequalities

One-Step

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.

Solving Equations

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

-Check your answer. You can always make sure you have the right answer. Make sure it makes sense!!!!!

-Isolate the variable to one side of the equation with 1 being its coefficient by using opposite operations.

Examples

$9 = a - 4$

$+4 \quad +4$

$13 = a$

$7 + c = -10$

$-7 \quad -7$

$c = -17$

MUST SHOW WORK!

Examples

$-7 + y = 15$

$+7 \quad +7$

$y = 22$

$c - (-7) = 12$

$+$

$c + 7 = 12$

$-7 \quad -7$

$c = 5$

Examples

$\frac{2}{3}x = \frac{8}{9}$

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

$-3b = 27$

$b = -9$

$\frac{3y}{7} = 9$

$y = 21$

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 <u>FLIP</u> the inequality symbol.

Review of Symbols

$>$

$<$

$\geq$

$\leq$

Solving Inequalities

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

$(-2)\,4 > 3(-2)$

$-8 > -6$ ✗ $\quad -8 < -6$ ✓

Examples

$x - 12 \geq 8$

$+12 \quad +12$

$x \geq 20$

$22 \geq m - 8$

$+8 \quad +8$

$30 \geq m$

$m \leq 30$

$-7d \leq 147$

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

$d \geq -21$

$\frac{3}{4}y > 12$

Examples

$-\frac{1}{6}x \leq -18$ $\left(\frac{-6}{1}\right)$

$x \geq 108$

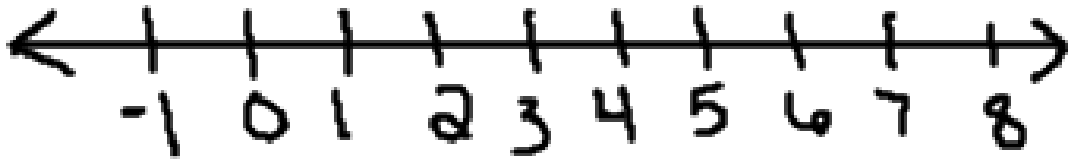
$64 > 4y$

$-5 + r > -7$

How to graph linear inequalities?

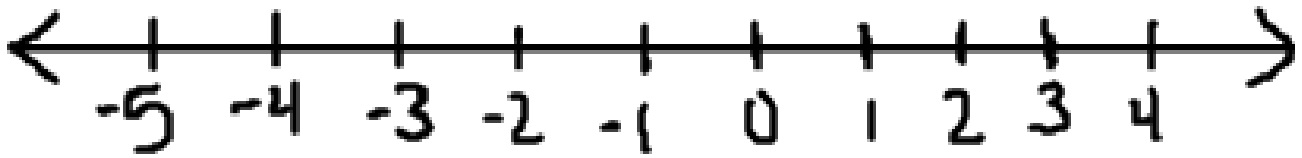
- Open circle: used when you have $>$ or $<$

Ex: $x > 4$



- Closed circle: used when you have $\geq$ or $\leq$

$x \leq -1$



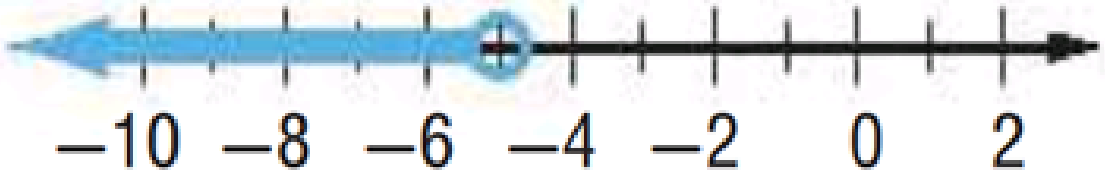
$$-\frac{1}{6}x \leq -18$$

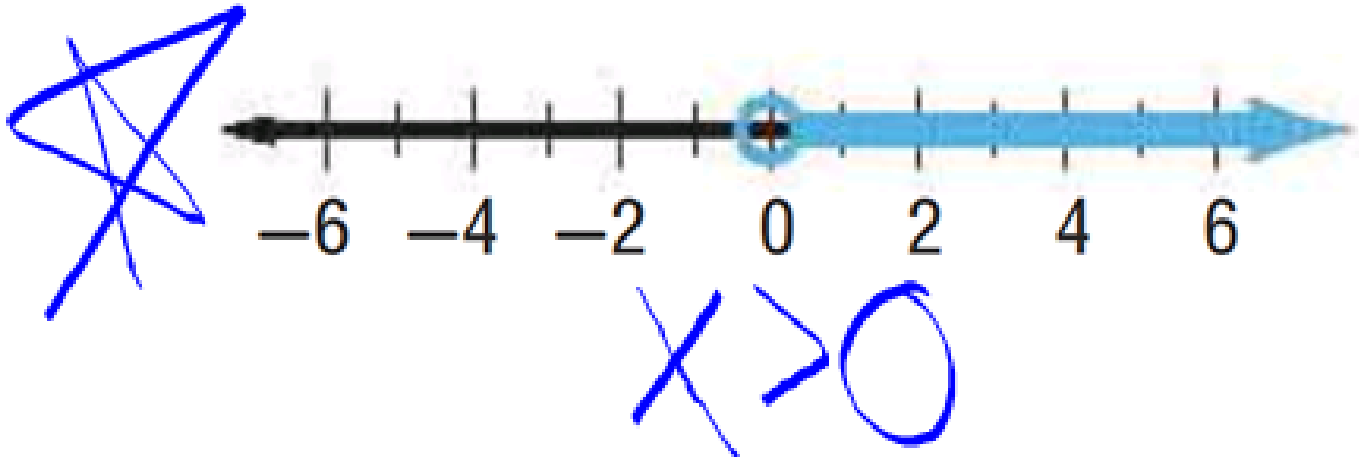
$$-5 + r > -7$$

$$64 > 4y$$

What are the graphs to these inequalities?

Write the Inequality for each graph...





Things to remember.....

1. When you are graphing a < or >, you use an _____.

2. When you are graphing a ≤ or ≥, you use a _____.

3. When you are moving a negative number by multiplication, you _____ the _____ .

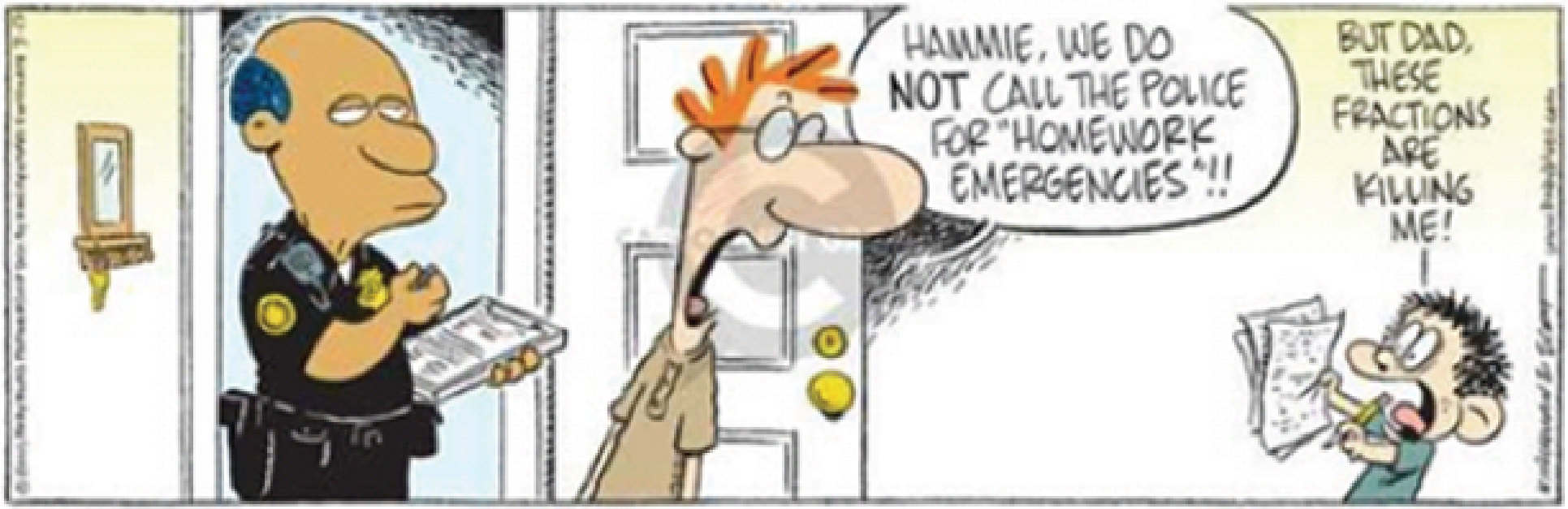
Goals aligned to common core standards:

- You will create and solve linear equations and inequalities.

- You will justify your reasoning for operations that are computed.

Classwork - Basic Budgeting

Due before you leave!!!!!!



Homework - Interpreting Expressions and Solving One Step EQ/IN worksheet

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