Problem of the Day: Write and solve an equation. Tree A is 6 ft. tall & grows 3 ft. annually. Tree B is currently 30 ft. tall and grows 2 ft. per year. In how many years will the height of the trees be the same?
Plan for the Day: Daily integer quiz (if needed)
Notes on writing inequalities from story problems
Finish circuit
Homework Week 4 is due TOMORROW!
Objective: We will be able to write inequalities from story problems.
Today is National Cheeseburger Day!!

< means less than
> means greater than
≤ means less than OR equal to
≥ means greater than OR equal to

Inequality- open sentence featuring <, >, ≤, ≥; differs from an equation because it is not equal (does not have an =)

Inequalities do not have one answer, but rather a **solution set** of numbers that make it true.

Examples: x < 6 x > -3

5,4,3,2,1,0,-1 -2,-1,0,1,2
5.99 -2.999999

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Writing an inequality from a story problem requires the same steps as an equation, except that you must know what sign (=, <, >, ≤, or ≥) to put into the statement.

If it is an inequality, you will NOT be asked to solve it, but just write it.

Words to determine if it is an equation or inequality:
equation - is, the same as, equals, equivalent

less than - is less than, is fewer than, below

greater than - is greater than, is more than, above

less than or equal to - is at most, is no more than

greater than or equal to - is at least, is no less than

Example 1: Write the inequality.
Five less than a negative three times a number is at least 13. Find the number.

X = #

$-5-3x \geq 13$

Example 2: Write an equation or inequality to represent the situation.
American Falcon is having an online sale. You can order any of the T-shirts for $12 each plus a $8 shipping fee. How many T-shirts can Danielle order if she has $92?

X = # of T-shirts

$12x+8 \leq 92$

Example 3: Write the inequality.
Six times a number increased by three is at least 15 less than nine times the number.

X = #

$6x+3 \geq -15+9x$

Example 4: Write the inequality.
Dairy King and Tex Sandwiches both have a membership club for buying ice cream. At Dairy King, you pay a $10 one-time fee and then get ice cream at the discounted price of $1.25. Tex Sandwiches has a fee of $4 once and then ice cream is sold for $1.50. How many times would you have to go to Dairy King for it to be cheaper than Tex Sandwiches?

x = # of ice cream

DK < TS

$10+1.25x < 4+1.50x$