Algebra 2

- Warm Up
- Check HW
- Notes on 1.4 Solving Inequalities
- Classwork/Homework

OBJECTIVE

Students will be able to solve, write and graph inequalities.

Warm Up

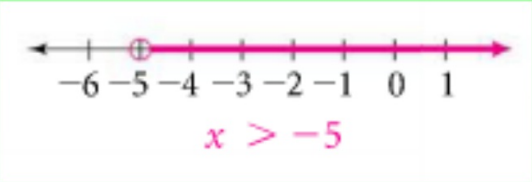
Solve each.

$$\frac{2x-4}{5} - 1 = 8$$

Solve for a.

$$\frac{a}{5} - \text{bd} = 3m$$

As with an equation, the solutions of an inequality are the numbers that make it true.



What are some solutions that make this inequality true?

When graphing, think of which solutions would make this equation true and shade that portion.

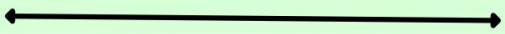
Closed dot for ≤ and ≥ Open dot for < and >

Every time we are solving inequalities and we divide or multiply by a NEGATIVE, we have to flip the sign. (could possibly flip multiple times)

Solve each inequality. Graph the solution.

a. $3x - 12 < 3$

b. $6 + 5(2 - x) \leq 41$

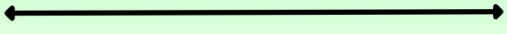


No Solutions or All Real Numbers as Solutions

Solve each inequality. Graph the solution.

a. $2x - 3 > 2(x - 5)$

b. $7x + 6 < 7(x - 4)$



Compound Inequalities

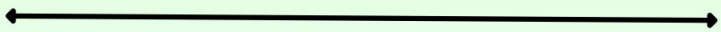
A **compound inequality** is a pair of inequalities joined by *and* or *or*.

- $-1 < x$ and $x \leq 3$, which you can also write as $-1 < x \leq 3$
- $x < -1$ or $x \geq 3$

Graph the solution of $3x - 1 > -28$ and $2x + 7 < 19$.

Compound Inequalities Continued...

Graph the solution of $4y - 2 \geq 14$ or $3y - 4 \leq -13$.



The cost, in cents, of manufacturing x pencils is 1200 + 20x. The pencil sells for 50 cents each. What number of pencils would need to be sold so that the revenue received is at least equal to the manufacturing cost?

The school is looking to buy shirts for all the new freshmen. If the cost for each shirt is $6 plus a $58 shipping fee and Seaholm can only spend at most $1300, how many shirts can they buy for students?

Classwork/Homework

Inequality Worksheet