

Key

Cornell Notes



Topic/Objective: Writing one-variable inequalities

with variables on both sides that represent problems

using rational number coefficients and constants.

Name:

Class/Period:

Date:

Essential Question: How do I write an inequality from a word problem?

Questions:

Notes:

Equations have an equal sign in them.

Inequalities have an inequality symbol in them.

< means less than

≤ means less than or equal to

> means greater than

≥ means greater than or equal to

NOTE: The part of the symbol that is underlined represents the bottom line of an equal sign. That is what gives the "or equal to" part

Key words/phrases for inequalities

Symbol	Words
<	Less than; fewer than
≤	Less than or equal to; No more than; At most
>	Greater than; more than
≥	Greater than or equal to; No less than; At least

NOTE: We still use the translation words, turn-around words, and parentheses phrases from writing equations to be able to write inequalities.

Summary:

Questions:

Notes:

Graphing Inequalities

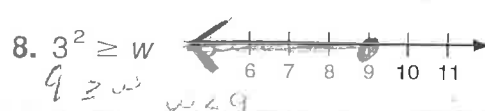
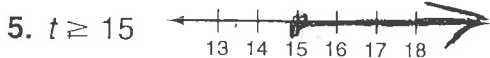
< uses an open dot and arrows/shading goes to the left

≤ uses a closed dot and arrows/shading goes to the left

> uses an open dot and arrows/shading goes to the right

≥ uses a closed dot and arrows/shading goes to the right

Graph each inequality.



Writing Inequalities from phrases/word problems

1.) Super-Clean house cleaning company charges a fee of \$384 to power wash a house plus \$2 per linear foot. Power Bright charges \$6 per linear foot, but no flat fee. Write an inequality that can be solved to find the number of linear feet a house must have to make the total cost charged by Super-Clean less than the cost charged by Power Bright.

super clean Power Bright
 $384 + 2x < 6x$ *X is # of linear feet*

2.) A yellow hot-air balloon is 100 feet off the ground and rising at a rate of 8 feet per second. An orange hot-air balloon is 160 feet off the ground and rising at a rate of 5 feet per second. Write an inequality to show how long will the yellow balloon be higher than the orange balloon.

S is # of seconds yellow orange
 $100 + 8s > 160 + 5s$

3.) The temperature in Amarillo is 74 °F and is increasing at a rate of 2 °F per hour. In Houston, it is 68 °F and increasing 4 °F per hour. Write an inequality to find how long it will take for the temperature in Houston to be at least the same temperature as Amarillo.

Amarillo Houston
 $74 + 2h \geq 68 + 4h$ *h is # of hours*

4.) Bob's Bagels offers pre-paid cards and has the specials shown. Diego has a \$50 card he uses to buy coffee and a bagel for \$3 each week. Carol has a \$60 card she uses to buy tea and a breakfast sandwich for \$5 each week. Write an inequality to find the number of weeks in which the balance on Diego's card will be no more than the balance on Carla's card.

Diego Carla
 $50 - 3w \leq 60 - 5w$ *w is # of weeks*

5.) Ten less than five times a number is less than six times the number decreased by eight.

$5x - 10 < 6x - 8$

6.) The sum of a number and twenty is greater than four times the number decreased by one.

$x + 20 > 4x - 1$