

2.1 Inequalities

Your Name

Mrs. T

10/1/2020

Notes

Objective: To be able to write inequalities from a sentence or a graph. To be able to graph inequality solutions. To understand how to check solutions in inequalities.

Life Lesson/Skill: When we graph inequalities with two variables on a coordinate plane, we need to be able to check our solutions to understand how to shade. Graphing on a number line is similar to graphing on a coordinate plane.

Inequality
Words

Which inequality does the description express? Sort them.

$x < 5$	$x > 5$	$x \leq 5$	$x \geq 5$
is less than	is greater than	is less than or equal to	is greater than or equal to
under	over	is at most <i>can be equal</i>	is at least <i>can be equal to</i>
		Limit	is no less than
		is no more than	

Ask yourself: Can it be more? Yes
or No? Can it be equal?

Watch video

x 5

Writing Inequalities

Ask yourself: Can it be more? Can it be equal?

$<$	$>$	\leq	\geq
is less than	is greater than	is at most is less than or equal to	is at least is greater than or equal to

1. Children under 6 eat free.

x : child's age

can't be more than 6? No

$$x < 6$$

2. Children 6 and under 6 eat free.

$$x \leq 6$$

6 and under 6
can be equal

3. Must be over 40 inches tall to ride this ride.

can't be equal

$$x > 40$$

can be more than 40

4. Speed limit 35.

$$x \leq 35$$

Write an inequality for each situation.

*page 431 might help with this

Chris' height is greater than 40 inches.

$$x > 40$$

I think all SUVs should have a fuel efficiency of at least 30 miles to the gallon.

x : fuel efficiency m/g

$$x \geq 30$$

She has collected more than 33 signed baseballs.

x : collected baseballs

$$x > 33$$

He has no more than 8 pets in his house.

can equal 8

x : # pets in house

$$x \leq 8$$

The boy gets paid \$5 per hour to babysit and last night he made at least \$40.

x : # hours babysitting

$$5 \cdot x \geq 40$$

$$\text{or } 5x \geq 40$$

1. A number x is greater than 3

$$x > 3$$

2. A number n plus 7 is less than or equal to 9

$$n + 7 \leq 9$$

3. Three is no more than the sum of a number x and 4.
(Remember: Sum means addition)

$$3 \leq (x + 4) \quad \text{or} \quad 3 \leq x + 4$$

4. Thirteen is at least the difference of a number y and 1
(Remember: Difference means subtraction)

$$13 \geq (y - 1) \quad \text{or} \quad y \geq y - 1$$

5. Fifteen is at most the product of a number w and 11.
(Remember: Product means multiplication)

$$15 \leq (w \cdot 11) \quad \text{or} \quad 15 \leq 11w$$

6. Four is no less than the quotient of a number x and 2.1.
(Remember: Quotient means division)

$$4 \geq (x \div 2.1) \quad \text{or} \quad 4 \geq \frac{x}{2.1}$$