



Math Virtual Learning

6th Grade Math

Understanding and Graphing Inequalities

April 21, 2020



6th Grade Math
Lesson: April 21, 2020

Objective/Learning Target:
Students will understand, use, and graph one-variable inequalities.

Warm up

Put the numbers in order from least to greatest.

Write your answer on a piece of paper

14 -8 23 6 -12 -20 7 20

Compare the pairs of numbers using $<$ or $>$

14 23

14 -23

-7 -12

-123 2

Warm up **answers**

Put the numbers in order from least to greatest.

Write your answer on a piece of paper

14 -8 23 6 -12 -20 7 20
-20 -12 -8 6 7 14 20 23

Compare the pairs of numbers using $<$ or $>$

$14 < 23$

$14 > -23$

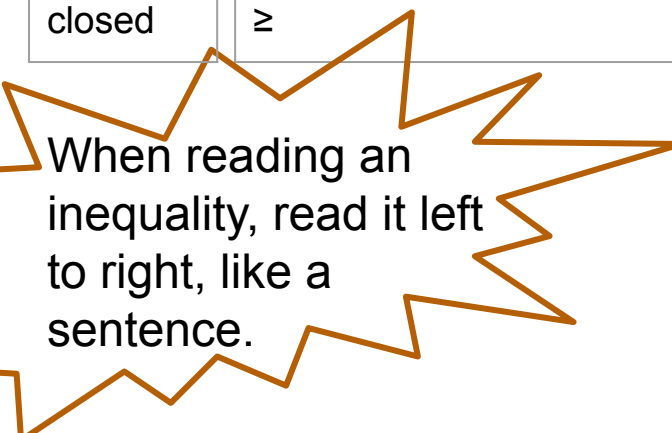
$-7 > -12$

$-123 < 2$

So what is an inequality?

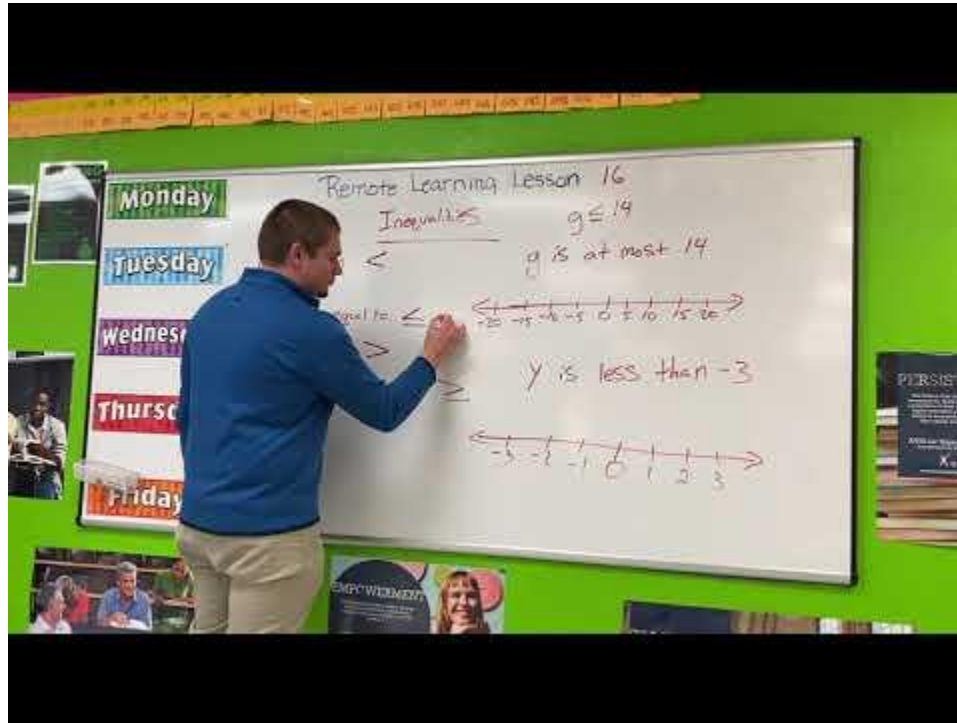
An inequality is a mathematical sentence that shows the relationship between two quantities that are NOT equal.

| Dot | Symbol | Meaning | Word phrases |
|--------|--------|-----------------------------|------------------------|
| open | $<$ | is less than | Fewer than, below |
| open | $>$ | is greater than | More than, above |
| closed | \leq | is less than or equal to | At most, no more than |
| closed | \geq | is greater than or equal to | At least, no less than |



When reading an inequality, read it left to right, like a sentence.

Click to watch the video.

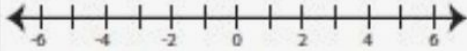


Practice

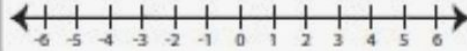
Graph the inequality and check your answers on the next slide

Graph the inequality:

1) $x \geq -2$



2) $x < 5$



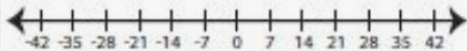
3) $x \leq 6$



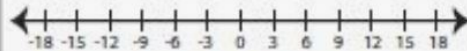
4) $x > 1$



5) $x < -14$



6) $x \leq 9$



7) $x > -2$



8) $x \geq -15$



Think!

Will the dot be open or closed? Which direction will the arrow go?

Practice answers

Graph the inequality and check your answers on the next slide

Graph the inequality:

1) $x \geq -2$



2) $x < 5$



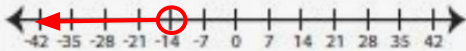
3) $x \leq 6$



4) $x > 1$



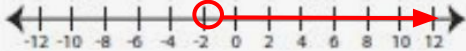
5) $x < -14$



6) $x \leq 9$



7) $x > -2$



8) $x \geq -15$



Think!

Will the dot be open or closed? Which direction will the arrow go?

Extra Practice Challenge!

Read the instructions carefully! Write your answer on a piece of paper and check the next slide to see if you're right!

What is ABCDEFGHIJKLMNOPQRSTUVWXYZ, Slurp?

Match any compound inequality below with the graph of its solution set. Write the letter next to the graph in each box that contains the number of that exercise. Keep working and you will discover the answer to the title question.

1) $x > 1$ or $x \leq -2$

2) $-3 \leq x < 2$

3) $x \geq 3$ or $x \leq 0$

4) $1 < x < 4$

5) $x \geq -1$ or $x < -2$

6) $-2 \leq x \leq 3$

7) $x > 0$

8) $x > 2$

9) $x < 0$

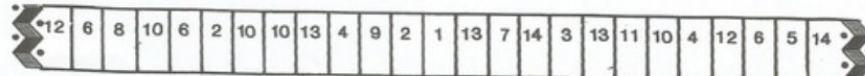
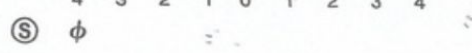
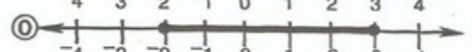
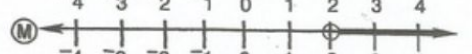
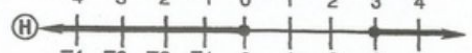
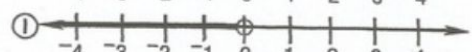
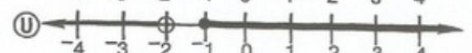
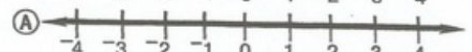
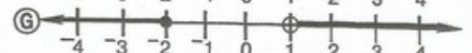
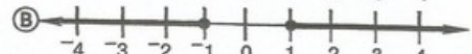
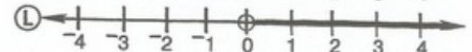
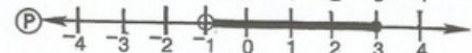
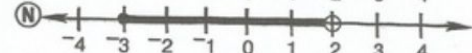
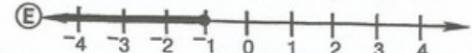
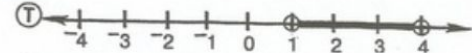
10) $x \leq -1$

11) $x \geq 1$ or $x \leq -1$

12) No Solution

13) All Real Numbers

14) $-1 < x \leq 3$



So what's the challenge answer?

Someone eating alphabet soup!

Reflection

On a piece of paper, write your understanding of today's lesson. Use the chart to help you. Go into detail explaining where you are struggling, or where you are succeeding.

Email your teacher if you feel like you need further assistance with today's lesson!

Rate Your Understanding

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
|  |  |  |  |  |
| I am so lost. | I don't really get it. | I'm starting to get it. | I got this. | I could teach it. |

Additional Resources

[Khan Academy](#)

[Game](#)