

Graphing Inequalities

Naming solutions to an inequality:

Any number that makes an inequality true is a solution to the inequality.

Here is an inequality: $y \leq 13$: This is read "y is less than or equal to 13."

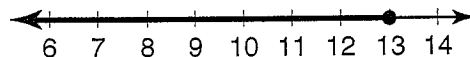
To come up with some solutions, think: What numbers are less than or equal to 13?

Some solutions to $y \leq 13$ are 13, 12, 10, 9, and 7. Any number equal to or less than 13 is a solution.

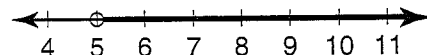
Graphing an inequality on a number line:

Graph $y \leq 13$.

- Draw a closed circle at 13 on the number line. This shows that 13 is a solution.
- Find several solutions and graph those on the number line. Start at the closed circle and draw a thick line over the solutions.
- Draw an arrow to show that the solutions go on forever.



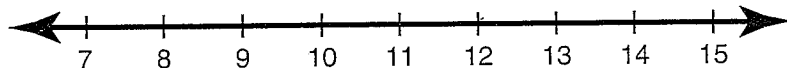
Here is how to graph $v > 5$:



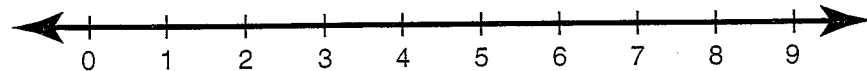
There is an open circle at 5. This shows that 5 is not a solution, but numbers close to 5 are.

Name three solutions to each inequality and graph the inequality on a number line.

1. $b > 9$



2. $t \leq 8$



3. **Number Sense** Is 3.96 a solution to the inequality $x < 4$? Explain how you know.

Graphing Inequalities

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Name 3 solutions of each inequality. Then graph the inequality on a number line.

1. $c < 5$ _____

2. $s \leq 9$ _____

3. $a > 14$ _____

4. $m \geq 21$ _____

5. **Number Sense** Is 2.25 a solution to the inequality $x > 2$? Explain how you can tell.

6. Hannah was driving her car at 55 mi per hour, then she slowed down. Use the inequality $s < 55$ to find three possible speeds of Hannah's car after she slowed down.

7. All of the shoes in Abbot's Shoe Store cost \$15.00 or more. Use the inequality $p \geq 15$ to find three possible prices of shoes.

Test Prep

8. Which are three possible solutions for the inequality $y > 12$?

A. 5, 7, 9

B. 10, 12, 14

C. 13, 17, 22

D. 12, 22, 32

9. **Writing in Math** Explain how the graphs of $g \leq 4$ and $g < 4$ are different.
