Understand Inequalities and Their Solutions

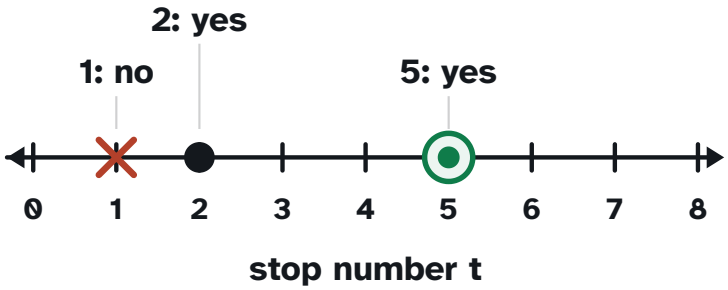
Graph all the solutions of an inequality on a number line.

Name _____ **Date** _____

Tonight's spark

An express bus stops at every stop number t where t ≥ 2. The stops on the route are 0, 1, 2, 3, and on. Does the bus stop at Stop 2? At Stop 1?

Guess first: does the bus stop at Stop 2, yes or no?



Our class model: the circle and the shading

Try it

Work it out on paper. Write one answer on each line.

1. **Which circle do you use to graph x ≤ 7?**

   A. An open circle **B.** A closed circle **C.** No circle **D.** Two circles

   My answer _____

2. **Which circle do you use to graph x > 2?**

   A. A closed circle **B.** An arrow only **C.** An open circle

   My answer _____

3. **To graph x > 4, which way do you shade?**

   A. Right of 4 **B.** Left of 4 **C.** Only at 4 **D.** Both sides

   My answer _____

4 **A graph has an open circle at 3 and shading to the left. Which inequality is it?**

A. $x > 3$ **B.** $x \geq 3$ **C.** $x < 3$ **D.** $x \leq 3$

My answer _____

5 **Which number is a solution of $x < 6$?**

A. 7 **B.** 6 **C.** 8 **D.** 5

My answer _____

6 **A graph has a closed circle at 8 and shading to the right. Which inequality is it?**

A. $x > 8$ **B.** $x \geq 8$ **C.** $x \leq 8$ **D.** $x < 8$

My answer _____

Talk about it

Why is the circle at 7 closed in one graph and open in the other? Which side did you shade?

Home mission

Line up 8 cups in a row. Number them 0 to 7 with sticky notes. Say "t ≥ 2." Flip the cups that work. Is cup 2 one of them? Which side is flipped?

If we get stuck, ask

- What number is the boundary, where the shading starts?
- Does the symbol have a line under it? That tells us open or closed circle.
- Which way are the answers — bigger numbers or smaller numbers?

Do it on a screen

Scan or type the link. Same lesson, with hints.

eduwonderlab.com/lessons/8-5/homework.html

How did it feel? (optional)

Tricky Getting there Got it