



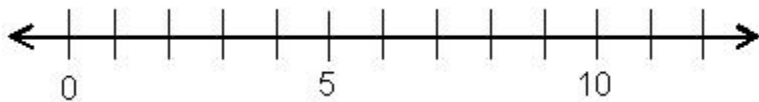
### Problem 1 – Inequality Applied to Volume

Read the problem given on page 1.2.

- The goal is to make a cup with a volume bigger than 12 fluid ounces. How is this written symbolically?
- How is the constraint for the height of the cup written symbolically?

On page 1.5, grab and drag point  $h$  or press play to better understand the problem.

- Draw the solution to the inequality on the number line below.

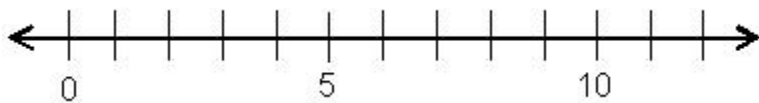


- Write an inequality expressing the solution of  $x$ .

### Problem 2 – Inequality applied to perimeter

Read the problem on page 2.1.

- $2x - 6 > 0$ . Solve for  $x$ .
- Write an inequality for “perimeter is at most 38.”
- Write an expression for the perimeter of the rectangle given on page 2.3.
- Draw the solution to the inequality on the number line below.



- Write an inequality expressing the solution of  $x$ .

**Extension**

## Problem 1

The perimeter of a rectangle with side  $2x$  and  $x+3$  must be at least 42.

- Find all values of  $x$  where this is true.

## Problem 2

A trapezoid has sides  $x$ ,  $2x+3$ ,  $16-x$ , and  $x$ .

- Since the length of each side must be greater than zero, write and simplify an inequality for each side.
  
- Find all values of  $x$  so that the perimeter is less than 37.