

# Horizontal and Vertical Lines

*Drawing Mathematics with Desmos | Justin Skycak*

**Setup.** Navigate to <https://www.desmos.com/calculator>. Be sure to sign in so that you can save your graph.

**Demonstration - Vertical Lines.** Observe the graph as you type each of the following inputs:

$$x = 1$$

$$x = 2$$

$$x = 3$$

**Demonstration - Horizontal Lines.** Observe the graph as you type each of the following inputs:

$$y = 1$$

$$y = 2$$

$$y = 3$$


**Demonstration - Rays and Segments.** Observe the graph as you type each of the following inputs:

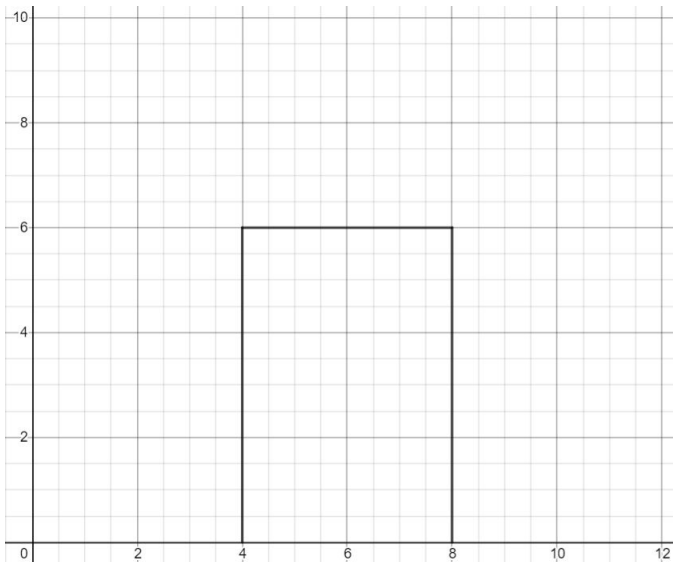
$$x = 1\{2 < y\}$$

$$x = 2\{2 < y < 3\}$$

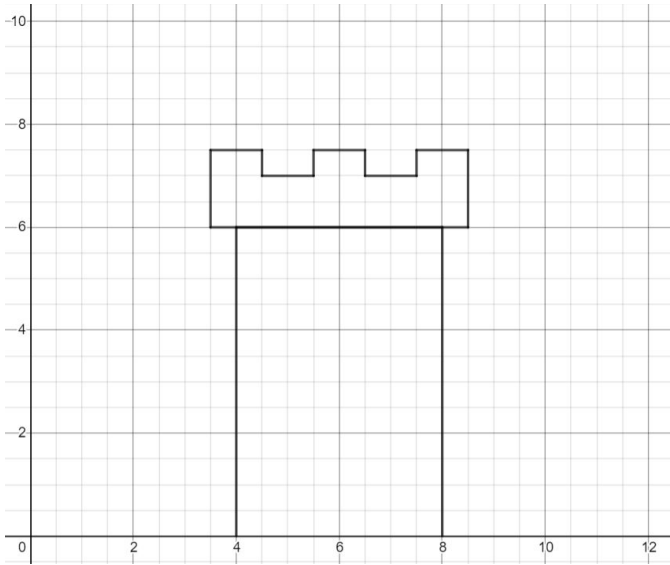
$$y = 1\{x < 2\}$$

$$y = 2\{0 < x < 2\}$$

**Exercise.** Reproduce the graph below. (Note: you can change the line color by clicking and holding the  icon.)



**Exercise.** Add ridges to the top of the graph you produced in the previous example.



**Challenge.** Draw a castle! A simple template provided below, but you are free to make your castle as complex as you would like.

