

Domain - all possible x values

Range- all possible x values

Interval notation is a method of writing down a set of numbers. Usually, this is used to describe a certain span or group of spans of numbers along a axis, such as an x-axis.

For example, consider the set of numbers that are all greater than 5. If we were to write an inequality for this set, letting  $x$  be any number in the group, we would say:

$$x > 5$$

This same set could be described in another type of notation called interval notation. In that notation the group of numbers would be written as:

$$(5, +\infty)$$

Now consider the group of numbers that are equal to 5 or greater than 5. That group would be described by this inequality:

$$x \geq 5$$

In interval notation this set of numbers would look like this:

$$[5, +\infty)$$

Now, what about numbers greater than 5 but less than 7? Expressed as an inequality this group would look like this:

This same group of numbers expressed with interval notation would look like this:

Here is an inequality showing a group of numbers equal to or greater than 5 and less than 7:

Here is this group of numbers expressed with interval notation

## To use interval notation:

Use the open parentheses ( ) if the value is not included in the graph.

Use the brackets [ ] if the value is part of the graph.

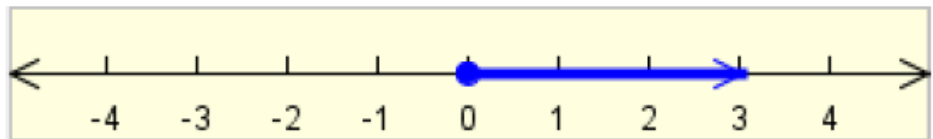
If the graph goes on forever to the left, the domain will start with  $(-\infty)$

If the graph travels downward forever, the range will start with  $(-\infty$ .

Similarly, if the graph goes on forever at the right or up, end with  $\infty$

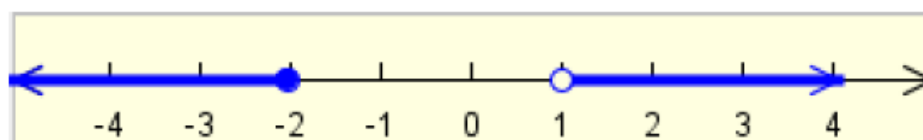
Whenever there is a break in the graph, write the interval up to the point. Then write another interval for the section of the graph after that part.

***Exercise 1***



**Figure 1**

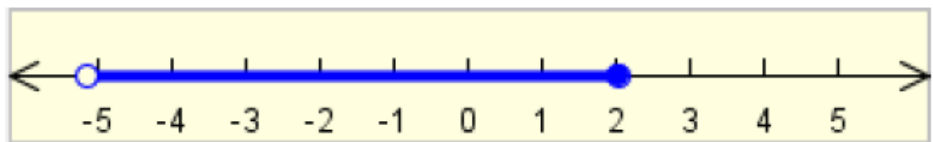
***Exercise 2***



**Figure 2**

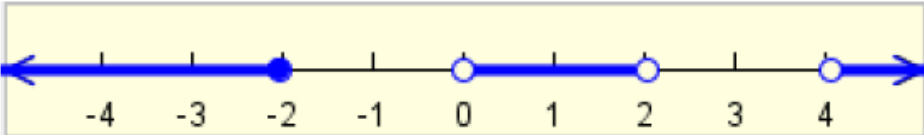


***Exercise 3***



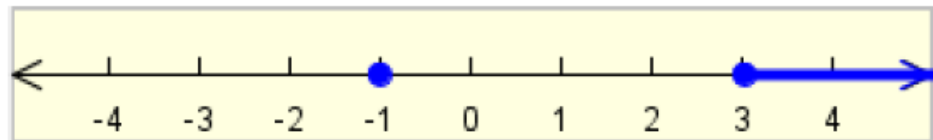
**Figure 3**

**Exercise 4**



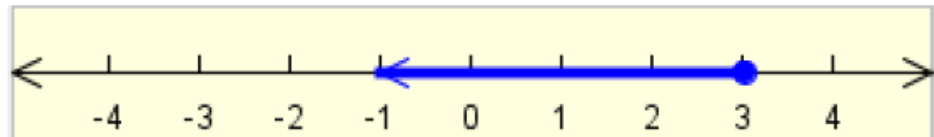
**Figure 4**

**Exercise 5**



**Figure 5**

**Exercise 6**



**Figure 6**

### Exercise 8

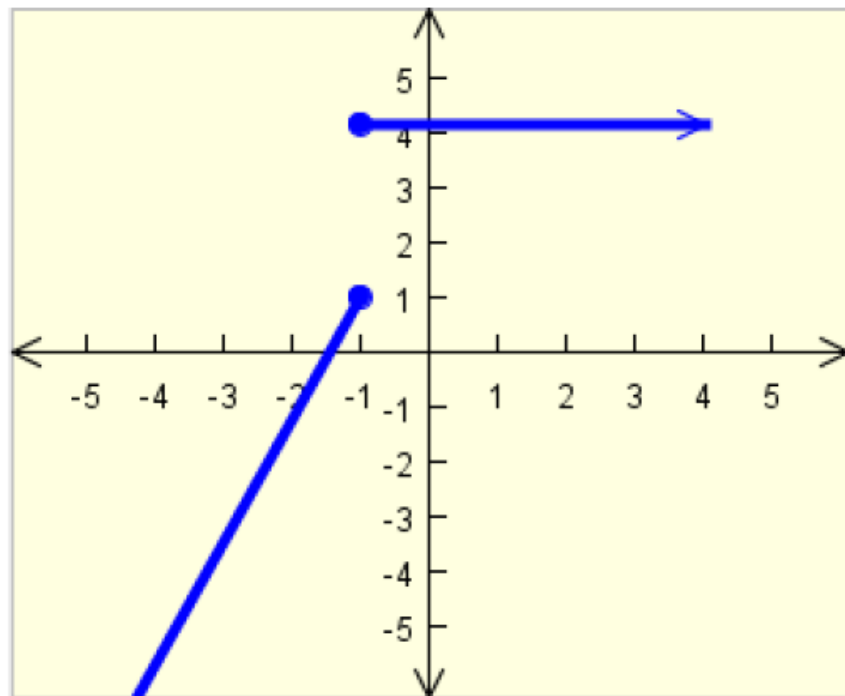
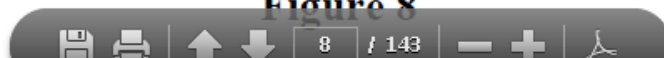


Figure 8



### Exercise 9

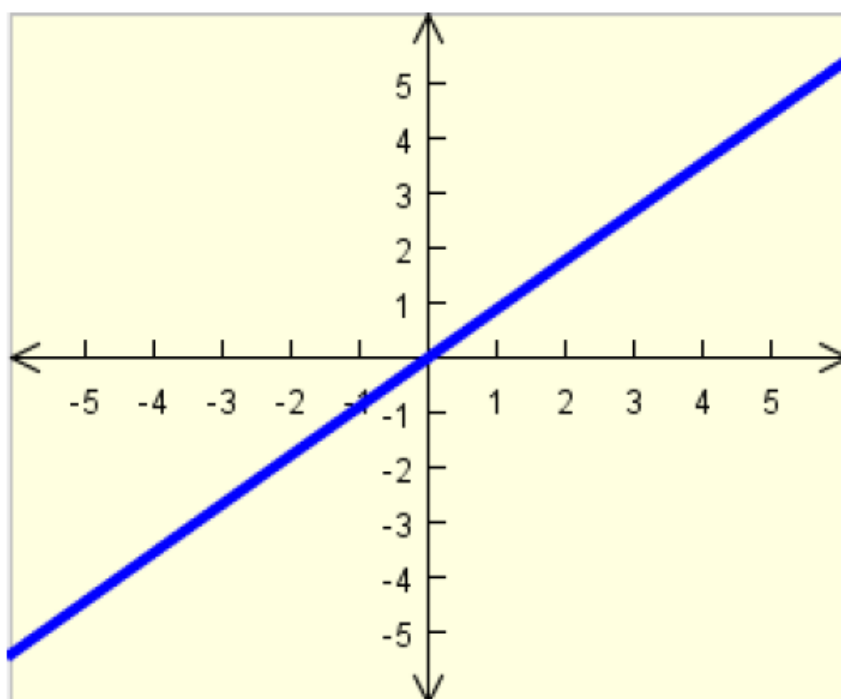


Figure 9

**Exercise 10**

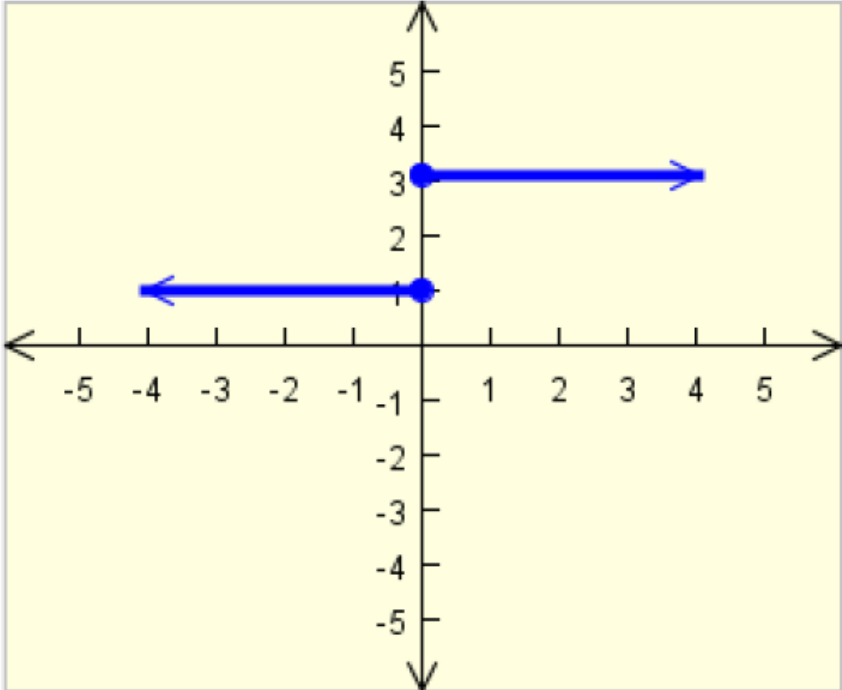
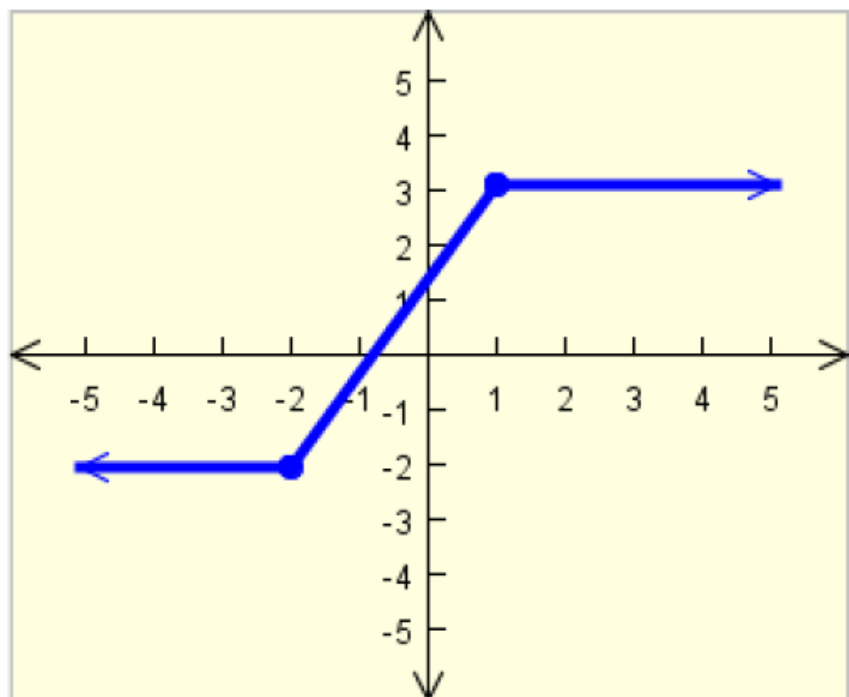


Figure 10 | 9 / 143 | - + |

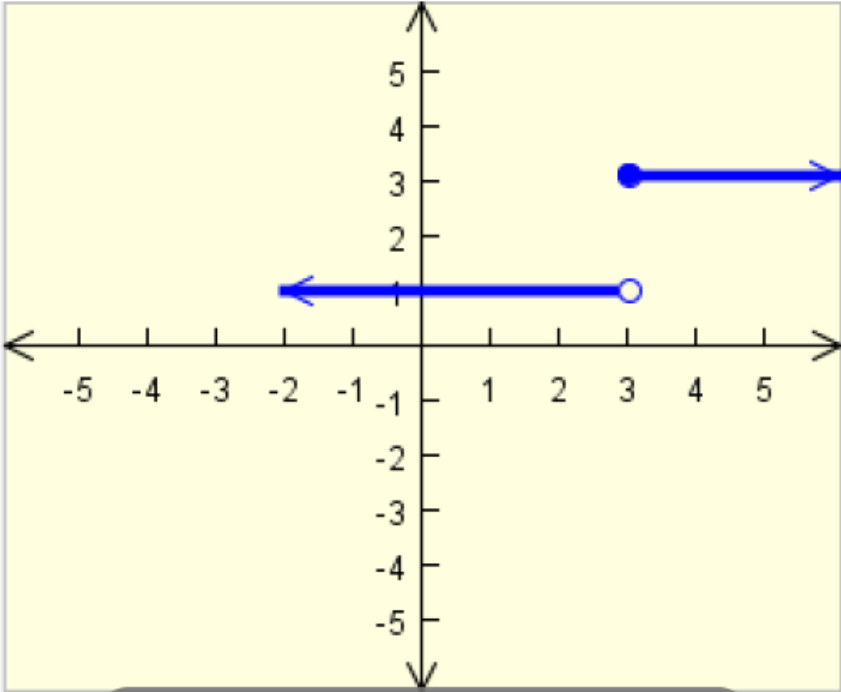
**Exercise 11**



**Figure 11**

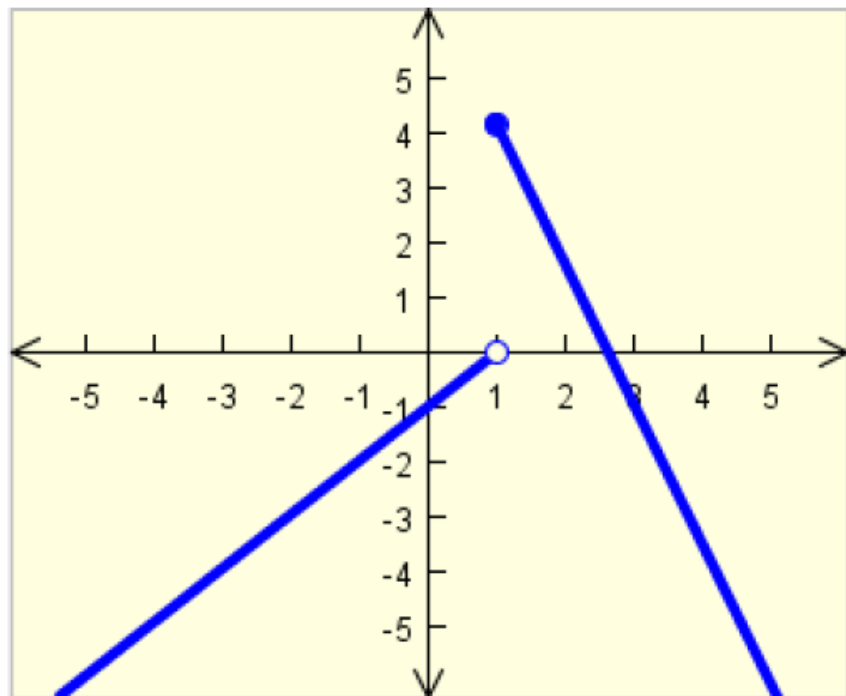


**Exercise 12**



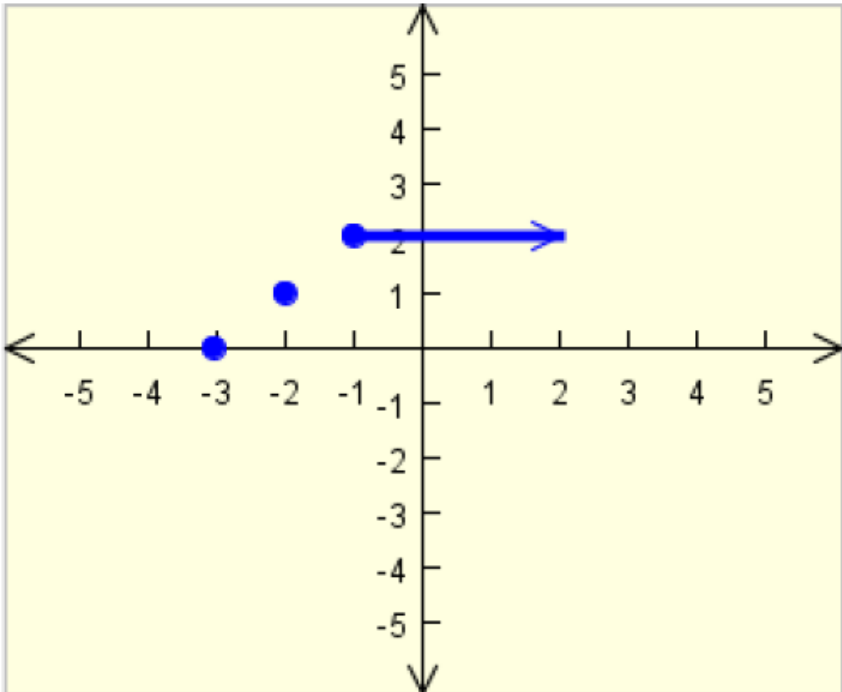
Navigation icons: save, print, up, down, page 10 of 143, zoom in, zoom out, and refresh.

**Exercise 14**



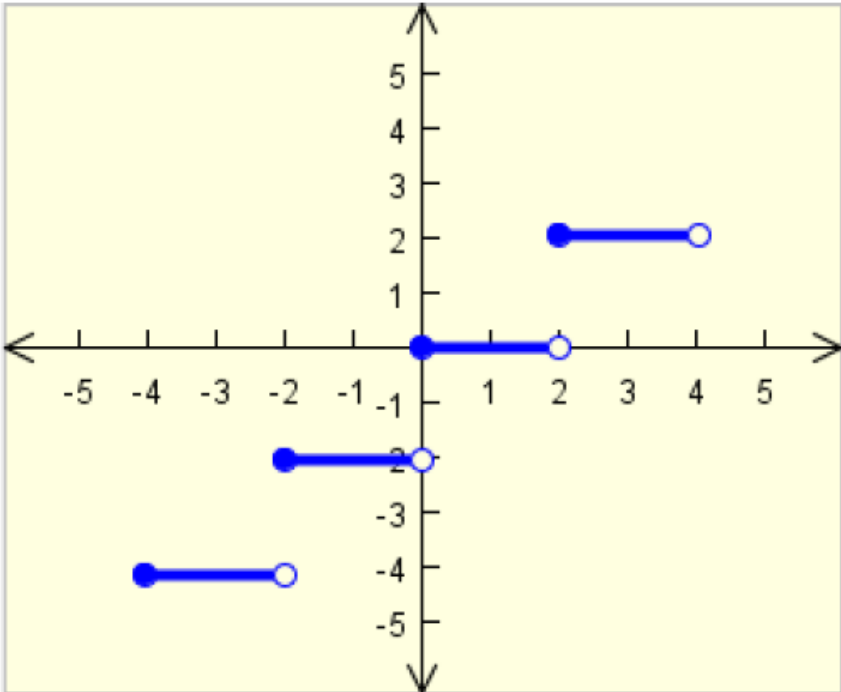
**Figure 14**

**Exercise 17**



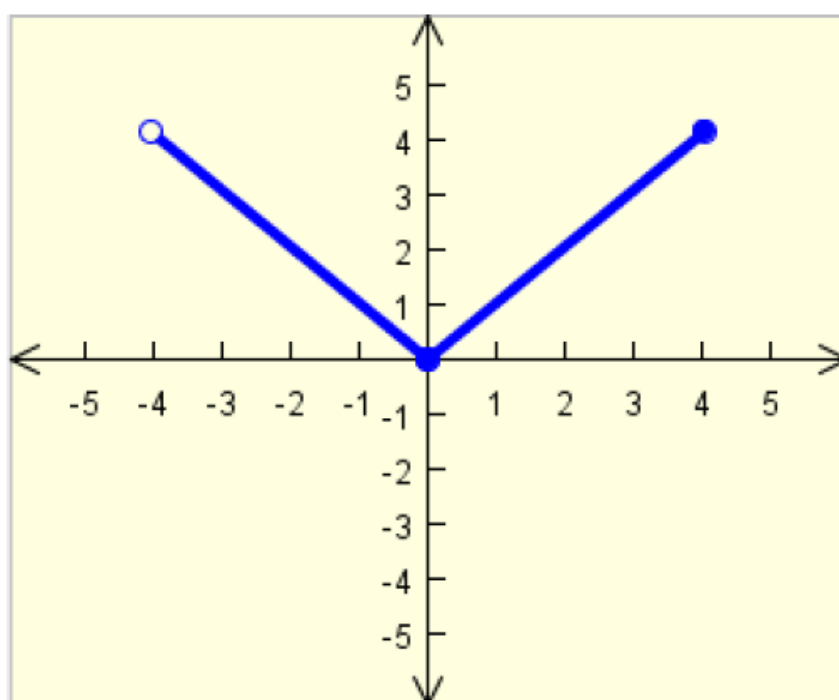
**Figure 17**

**Exercise 19**



**Figure 19**

**Exercise 20**



**Figure 20**