

# 2.18

## Graphing a Linear Inequality on a Number Line

### • Example 1

The set of all numbers  $x$  satisfying the inequality  $x < 6$ , can be represented by an interval on the number line. This interval contains all the points to the left of 6, as shown by the arrow on the left in the graph below.



**Note:** The **open circle** at 6 means that we do not include 6 in the interval (6 is not less than itself).

### • • • CHECK YOURSELF 1

Graph the inequality  $x < -2$ .

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### • Example 2

The inequality  $x \geq 5$  is graphed as follows.

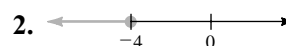
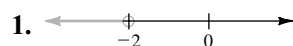


### • • • CHECK YOURSELF 2

Graph the inequality  $x \leq -4$ .

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### • • • CHECK YOURSELF ANSWERS



# 2.18 Exercises

Name \_\_\_\_\_

Section \_\_\_\_\_

Date \_\_\_\_\_

## A N S W E R S

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

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13. \_\_\_\_\_

14. \_\_\_\_\_

15. \_\_\_\_\_

16. \_\_\_\_\_

17. \_\_\_\_\_

18. \_\_\_\_\_

Graph the following inequalities.

1.  $x > 2$

2.  $x < -3$

3.  $x < 9$

4.  $x > 4$

5.  $x > 1$

6.  $x < -2$

7.  $x < 8$

8.  $x < -3$

9.  $x > -5$

10.  $x < -4$

11.  $x \geq 9$

12.  $x \geq 0$

13.  $x < 0$

14.  $x \leq -3$

15.  $x > 5$

16.  $x \leq -6$

17.  $x \leq -4$

18.  $x \geq 9$