

2.21

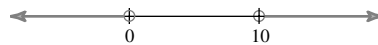
Graphing a Compound Linear Inequality on a Number Line

• Example 1

Graph on a number line the set of all points x satisfying the compound inequality

$$x < 0 \text{ or } x > 10.$$

We want to represent graphically the set of all real numbers that are to the left of 0 or to the right of 10. We use open dots to indicate that 0 and 10 are not in the set.



• • • CHECK YOURSELF 1

Graph the set of points satisfying

$$x < -4 \text{ or } x > 0.$$

• Example 2

Graph on an number line the set of all points x satisfying the compound inequality

$$x < 12 \text{ and } x \geq -4.$$

We want to represent graphically the set of all real numbers that are both to the left of 12 and to the right of -4 . We use an open dot to indicate that 12 is not in the set. We use a closed dot to indicate that -4 is in the set.



• • • CHECK YOURSELF 2

Graph the set of points satisfying

$$x < 26 \text{ and } x > 2.$$

• • • CHECK YOURSELF ANSWERS



2.21 Exercises

Name _____

Section _____

Date _____

A N S W E R S

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

For each Exercise, graph the set of points satisfying the compound inequality.

1. $x > 0$ or $x < -1$

2. $x < 5$ or $x > 7$

3. $x < -15$ or $x > -4$

4. $x < -5$ or $x > 3$

5. $x < 5$ or $x > 0$

6. $x \leq 9$ and $x > -4$

7. $x < 4$ and $x > -3$

8. $x < 16$ and $x \geq 5$

9. $x \leq -3$ and $x \geq -8$

10. $x < 7$ and $x \geq -2$