



GUIDED PRACTICE

1. **Vocabulary** The graph of a(n) ___?___ shows all values that are solutions to both simple inequalities that make a compound inequality. (*union* or *intersection*)
2. **Biology** An iguana needs to live in a warm environment. The temperature in a pet iguana's cage should be between 70 °F and 95 °F inclusive. Write a compound inequality to show the temperatures that are within the recommended range. Graph the solutions.

SEE EXAMPLE 1

Solve each compound inequality and graph the solutions.

SEE EXAMPLE 2

3. $-3 < x + 2 < 7$

4. $5 \leq 4x + 1 \leq 13$

5. $2 < x + 2 < 5$

6. $11 < 2x + 3 < 21$

SEE EXAMPLE 3

7. $x + 2 < -6$ OR $x + 2 > 6$

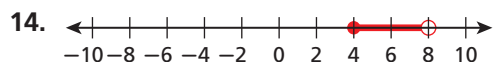
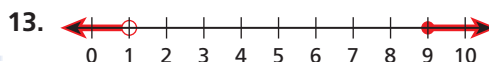
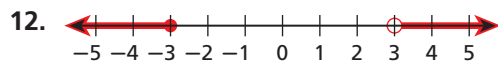
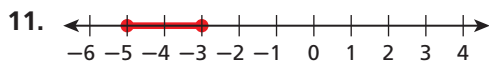
8. $r - 1 < 0$ OR $r - 1 > 4$

9. $n + 2 < 3$ OR $n + 3 > 7$

10. $x - 1 < -1$ OR $x - 5 > -1$

SEE EXAMPLE 4

Write the compound inequality shown by each graph.



PRACTICE AND PROBLEM SOLVING

Independent Practice

For Exercises	See Example
15	1
16–19	2
20–23	3
24–27	4



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Online Extra Practice

15. **Meteorology** One layer of Earth's atmosphere is called the stratosphere. At one point above Earth's surface the stratosphere extends from an altitude of 16 km to an altitude of 50 km. Write a compound inequality to show the altitudes that are within the range of the stratosphere. Graph the solutions.

Solve each compound inequality and graph the solutions.

16. $-1 < x + 1 < 1$

17. $1 \leq 2n - 5 \leq 7$

18. $-2 < x - 2 < 2$

19. $5 < 3x - 1 < 17$

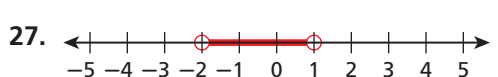
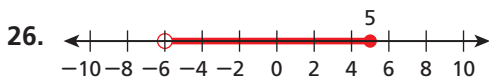
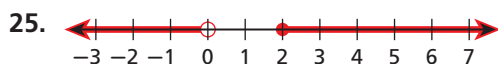
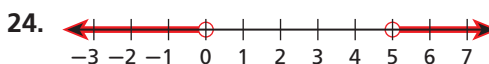
20. $x - 4 < -7$ OR $x + 3 > 4$

21. $2x + 1 < 1$ OR $x + 5 > 8$

22. $x + 1 < 2$ OR $x + 5 > 8$

23. $x + 3 < 0$ OR $x - 2 > 0$

Write the compound inequality shown by each graph.



28. **Music** A typical acoustic guitar has a range of three octaves. When the guitar is tuned to "concert pitch," the range of frequencies for those three octaves is between 82.4 Hz and 659.2 Hz inclusive. Write a compound inequality to show the frequencies that are within the range of a typical acoustic guitar. Graph the solutions.