3-6 Exercises

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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*)

SEE EXAMPLE 1 p. 202

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 2 p. 203

Solve each compound inequality and graph the solutions.

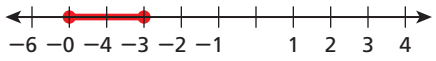
3. $-3 < x + 2 < 7$
4. $5 \leq 4x + 1 \leq 13$
5. $2 < x + 2 < 5$
6. $11 < 2x + 3 < 21$

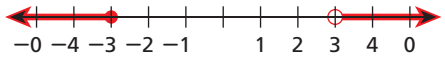
SEE EXAMPLE 3 p. 204

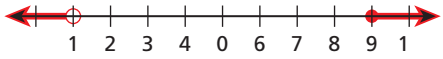
7. $x + 2 < -6$ OR $x + 2 > 6$
8. $r - 1 < 0$ OR $r - 1 > 4$
9. $n + 2 < 3$ OR $n + 3 > 7$
10. $x - 1 < -1$ OR $x - 5 > -1$

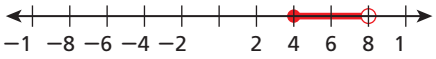
SEE EXAMPLE 4 p. 205

Write the compound inequality shown by each graph.

11. 

12. 

13. 

14. 

PRACTICE AND PROBLEM SOLVING

Independent Practice

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

Extra Practice

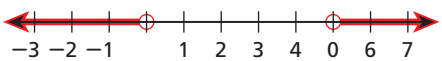
Skills Practice p. S9
Application Practice p. S30

15. **Meteorology** Earth's atmosphere is made of several layers. A layer called the stratosphere extends from about 16 km above Earth's surface to about 50 km above Earth's surface. Write a compound inequality to show the altitudes that are within the range of the stratosphere. Graph the solutions.

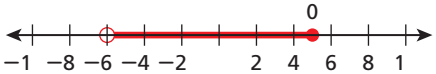
Solve each compound inequality and graph the solutions.

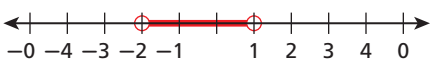
16. $-1 < x + 1 < 1$
17. $1 \leq 2n - 5 \leq 7$
18. $-2 < x - 2 < 2$
19. $5 < 3x - 1 < 17$
20. $x - 4 < -7$ OR $x + 3 > 4$
21. $2x + 1 < 1$ OR $x + 5 > 8$
22. $x + 1 < 2$ OR $x + 5 > 8$
23. $x + 3 < 0$ OR $x - 2 > 0$

Write the compound inequality shown by each graph.

24. 

25. 

26. 

27. 

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.