ERCISES

For more practice, see *Extra Practice.*

ctice and Problem Solving

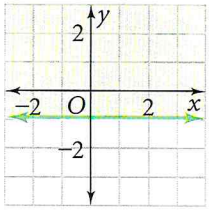
Practice by Example

Example 1 (page 371)

Determine whether point P is a solution of the linear inequality.

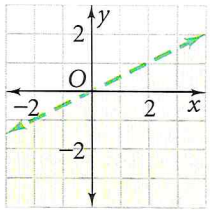
1. $y \leq -2x + 1; P(2, 2)$
2. $x < 2; P(1, 0)$
3. $y \geq 3x - 2; P(0, 0)$
4. $y > x - 1; P(0, 1)$
5. $y \geq -\frac{2}{5}x + 4; P(0, 0)$
6. $y > \frac{5}{3}x - 4; P(0, 1)$

Choose the linear inequality that describes each graph.

7. 

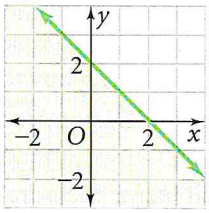
A. $y \geq -1$

B. $y \leq -1$

8. 

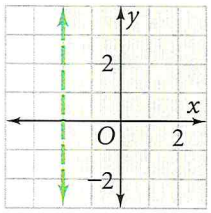
A. $y > \frac{1}{2}x$

B. $y < \frac{1}{2}x$

9. 

A. $y \geq -x + 2$

B. $y \leq -x + 2$

10. 

A. $x > -2$

B. $x < -2$

Graph each linear inequality.

11. $y \leq \frac{1}{4}x - 1$
12. $y \geq \frac{1}{4}x - 1$
13. $y < -4x - 1$
14. $y \geq 4x - 1$
15. $y < 5x - 5$
16. $y \leq \frac{2}{5}x - 3$
17. $y \leq -3x$
18. $y \geq -\frac{1}{2}x$

Example 2 (page 371)

Write each linear inequality in slope-intercept form. Then graph the inequality.

19. $2x - 3y \geq 7$
20. $5x - 3y \leq 6$
21. $4x - 6y \geq 16$
22. $-4y - 6x > 8$

Example 3 (page 372)

23. **Budget** Suppose you are shopping for crepe paper to decorate the school gym for a dance. Gold crepe paper costs \$5 per roll, and blue crepe paper costs \$3 per roll. Your budget allows you to spend at most \$48 for crepe paper. How many rolls of gold and blue crepe paper can you buy without exceeding your budget?

Let x = the number of rolls of blue crepe paper.
Let y = the number of rolls of gold crepe paper.

a. Write a linear inequality that describes the situation.
b. Graph the linear inequality.
c. Write three possible solutions to the problem.
d. **Critical Thinking** The point $(-2, 5)$ is a solution of the inequality. Is it a solution of the problem? Explain.

World Connection

erican Academy of
edic Surgeons
that a backpack's
should not be more
% of a student's
eight.

24. **Manufacturing** A company makes nylon and canvas backpacks, as shown at the left. The profit on a nylon backpack is \$3 and the profit on a canvas backpack is \$10. How many backpacks must the company sell to make a profit of more than \$250?

a. Write a linear inequality that describes the situation.
b. Graph the linear inequality.
c. Write three possible solutions to the problem.
d. **Critical Thinking** Which values are reasonable for the domain and for the range? Explain.