

GUIDED PRACTICE

Vocabulary Check ✓

Concept Check ✓

1. Compare the graph of a linear inequality with the graph of a linear equation.
2. Would you use a dashed line or a solid line for the graph of $Ax + By < C$? for the graph of $Ax + By \leq C$? Explain.

Tell whether the statement is *true* or *false*. Explain.

3. The point $(\frac{4}{3}, 0)$ is a solution of $3x - y > 4$.
4. The graph of $y < 3x + 5$ is the half-plane below the line $y = 3x + 5$.

Skill Check ✓

GRAPHING INEQUALITIES Graph the inequality in a coordinate plane.

5. $x > 5$
6. $y < -4$
7. $3x \leq 1$
8. $-y \geq \frac{4}{3}$
9. $y \geq -x + 7$
10. $y > \frac{2}{3}x - 1$
11. $2x - 3y < 6$
12. $x + 5y \leq -10$

13. **CALLING CARDS** Look back at Example 4. Suppose you have relatives living in China instead of Mexico. Calls to China cost \$.75 per minute. Write and graph a linear inequality showing the number of minutes you can use for calls within the United States and for calls to China. Then discuss three possible solutions in the context of the real-life situation.

PRACTICE AND APPLICATIONS

STUDENT HELP

Extra Practice to help you master skills is on p. 942.

CHECKING SOLUTIONS Check whether the given ordered pairs are solutions of the inequality.

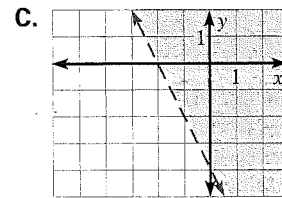
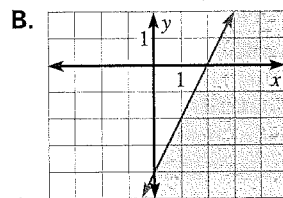
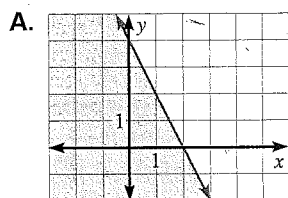
14. $x \leq -5$; $(0, 2)$, $(-5, 1)$
15. $2y \geq 7$; $(1, -6)$, $(0, 4)$
16. $y < -9x + 7$; $(-2, 2)$, $(3, -8)$
17. $19x + y \geq -0.5$; $(2, 3)$, $(-1, 0)$

INEQUALITIES IN ONE VARIABLE Graph the inequality in a coordinate plane.

18. $x \leq 6$
19. $-x \geq 20$
20. $10x \geq \frac{10}{3}$
21. $-3y < 21$
22. $8y > -4$
23. $y < 0.75$

MATCHING GRAPHS Match the inequality with its graph.

24. $2x - y \geq 4$
25. $-2x - y < 4$
26. $2x + y \leq 4$



INEQUALITIES IN TWO VARIABLES Graph the inequality.

27. $y \leq 3x + 11$
28. $y > -4 - x$
29. $y < 0.75x - 5$
30. $3x + 12y > 4$
31. $9x - 9y > -36$
32. $\frac{3}{2}x + \frac{2}{3}y > 1$

STUDENT HELP

HOMEWORK HELP

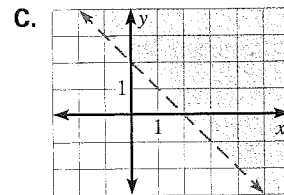
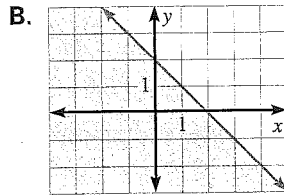
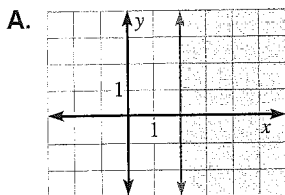
Example 1: Exs. 14–17
 Example 2: Exs. 18–23, 33–44
 Example 3: Exs. 24–44
 Example 4: Exs. 45–51

MATCHING GRAPHS Match the inequality with its graph.

33. $x + y > 2$

34. $x \geq 2$

35. $y \leq -x + 2$



GRAPHING INEQUALITIES Graph the inequality in a coordinate plane.

36. $9x - 2y \leq -18$

37. $y < 3x - \frac{3}{4}$

38. $5x > -20$

39. $y \geq \frac{1}{5}x + 10$

40. $4y \leq -6$

41. $2x + 3y > 4$

42. $6x \geq -\frac{1}{3}y$

43. $0.25x + 3y > 19$

44. $x + y < 0$

45. **HEALTH RISKS** By comparing the blood pressure in your ankle with the blood pressure in your arm, a physician can determine whether your arteries are becoming clogged with plaque. If the blood pressure in your ankle is less than 90% of the blood pressure in your arm, you may be at risk for heart disease. Write and graph an inequality that relates the unacceptable blood pressure in your ankle to the blood pressure in your arm.

NUTRITION In Exercises 46 and 47, use the following information.

Teenagers should consume at least 1200 milligrams of calcium per day. Suppose you get calcium from two different sources, skim milk and cheddar cheese. One cup of skim milk supplies 296 milligrams of calcium, and one slice of cheddar cheese supplies 338 milligrams of calcium. ▶ Source: *Nutrition in Exercise and Sport*

46. Write and graph an inequality that represents the amounts of skim milk and cheddar cheese you need to consume to meet your daily requirement of calcium.
47. Determine how many cups of skim milk you should drink if you have eaten two slices of cheddar cheese.

MOVIES In Exercises 48 and 49, use the following information.

You receive a gift certificate for \$25 to your local movie theater. Matinees are \$4.50 each and evening shows are \$7.50 each.

48. Write and graph an inequality that represents the numbers of matinees and evening shows you can attend.
49. Give three possible combinations of the numbers of matinees and evening shows you can attend.

FOOTBALL In Exercises 50 and 51, use the following information.

In one of its first five games of a season, a football team scored a school record of 63 points. In all of the first five games, points came from touchdowns worth 7 points and field goals worth 3 points.

50. Write and graph an inequality that represents the numbers of touchdowns and field goals the team could have scored in any of the first five games.
51. Give five possible numbers of points scored, including the number of touchdowns and the number of field goals, for the first five games.



NUTRITIONISTS

A nutritionist plans nutrition programs and promotes healthy eating habits. Over one half of all nutritionists work in hospitals, nursing homes, or physician's offices.



CAREER LINK

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