

EXERCISES

 For more practice, see *Extra Practice*.




A Practice by Example

Solve each inequality. Check your work. Exercise 1 has been started for you.

- $2x - 4 < 8$
 $2x - 4 + 4 < 8 + 4$
- $3y + 1 < -7$
- $-5w + 8 \geq 13$
- $\frac{a}{-8} - 7 > -8$
- $\frac{k}{5} + 2 > 6$
- $30 > 12 + 2b$
- $-2 + \frac{m}{3} \leq -11$
- $5 \geq -4d + 9$
- $-7 \geq 5 - 2g$
- $-12 - 4n \leq 0$
- $23 - 2x \leq -9$
- $17p - 34 > 306$
- $-11z - 6 > 335$
- $5 - \frac{k}{9} < 4$
- $13 - \frac{a}{6} < 29$

Example 2 (page 104)

Write and solve an inequality to answer each question.




-  **16. Cable Television** Basic cable television service costs \$20 per month. There is a \$10 charge for each premium movie station. Your parents budget no more than \$60/month for cable service. How many movie stations can your family order?
-  **17. Movies** Suppose a Web site offers some of your favorite video games for \$14.50 each. There is a flat-rate shipping charge of \$6. You have at most \$50 you can spend. How many games can you buy?
-  **18. Baking** You have a bag of flour that contains at least 20 cups of flour. You make a batch of bread that uses 12 cups of flour. A batch of muffins uses 3.5 cups. How many batches of muffins can you make?

B Apply Your Skills

Solve each inequality.

- $\frac{t}{-2} - 0.8 \geq 1$
- $2.5x - 3.1 > 1.4$
- $1.2 \leq 3x - 1.8$
- $0.7 - 2.5t \geq 8.2$
- $3 + \frac{n}{4} - 1 < 5$
- $7 - 3q - 2 \geq 13$

Write and solve an inequality to answer each question.

-  **25. Grades** Students in an English class need a mean of at least 90 points on four tests to earn an A. One student has scored 87, 92, and 85. Write and solve an inequality to find what score the student needs on the next test to earn an A.
-  **26. Running** Vicky is running in a 13-mile road race. She wants to finish with a time under 2 hours. After 5 miles she sees that 52 minutes have elapsed. What time must she average per mile for the remainder of the race to reach her goal?
-  **27. Swimming** There are 8 laps in the 200-meter butterfly race. Your school's record is 1:52.36. Your fastest time is 1:59.28. Write and solve an inequality to find how much time you would have to cut off each lap to break the school record.

Example 1 (page 103)

Error Analysis What error was made in solving each inequality?

28.

$$\begin{aligned} -3w - 4 &< 5 \\ -3w &< 9 \\ w &< -3 \end{aligned}$$

29.

$$\begin{aligned} 2t + 5 &\geq 11 \\ 2t &\geq 16 \\ t &\geq 8 \end{aligned}$$

30. **Writing in Math** Describe how the process of solving $-3v - 9 = 12$ is different from solving $-3v - 9 < 12$.

31. **Open-Ended** Write a problem that you could represent with the inequality $4b + 3 \leq 39$. Then solve the inequality.

32. Solve $2x - 8 < 52$. Justify your steps.



Challenge



33. **Party** Your parents are having a hundredth birthday party for your great-grandmother. The hall costs \$400 to rent. The meal costs \$20 per person. The decorations cost \$75. Your parents budgeted no more than \$2,000 in all. How many people can attend the party?

Solve each inequality.

34. $2x < x - 1$

35. $2z + z - 9 > 30$

36. $-(x - 4) \geq 11$

37. $15 < -5(x + 1)$

38. $16 - \frac{x}{-5} < 20$

39. $9 - \frac{w}{-2} > -15$

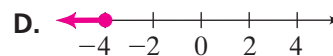
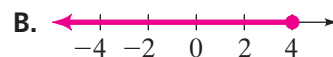
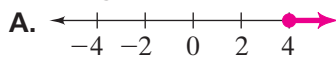
40. **Stretch Your Thinking** A red circle touches two green circles. The green circles also intersect. Make two different drawings for this description.



Test Prep

Multiple Choice

41. Which graph shows the solutions of $-2x - 5 \leq -13$?



42. Which inequality could you use to solve the following problem: Chandra's calling plan has a monthly fee of \$17 and \$.05/min for long-distance calls. She budgets no more than \$25 per month for her telephone bill. How many minutes can she talk long distance?

F. $17 + 0.05x \leq 25$

G. $17 + 0.05x < 25$

H. $17 + 0.05x \geq 25$

I. $17 + 0.05x > 25$

43. Solve $\frac{k}{-4} + 3 \leq -1$.

A. $k \leq 16$

B. $k \geq -8$

C. $k \leq -8$

D. $k \geq 16$

Short Response

44. You plan a bowling party for 19 friends. You know that 14 friends need rides to the bowling alley. A car can hold at most 4 people, excluding the driver. Write and solve an inequality to find how many cars you need if none of your friends drive. Show your work.

Mixed Review

Lesson 2-6

Algebra Write an inequality for each situation.

45. You must be at least 17 years old to donate blood.

46. In a densely populated area, a car's speed should not exceed 35 mi/h.

47. The delivery truck makes more than 85 stops each day.



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