2.4 Practice WITH CalcChat® AND CalcView®

GO DIGITAL

In Exercises 1–10, solve the inequality. Graph the solution. *Example 1*

1. $2x - 3 > 7$
2. $5y + 9 \leq 4$
3. $-3 \leq 1 - 8v$
4. $-8 > -3t - 10$
5. $\frac{w}{2} + 4 > 5$
6. $1 + \frac{m}{3} \leq 6$
7. $\frac{p}{-8} - \frac{2}{5} > \frac{8}{5}$
8. $\frac{1}{2} + \frac{r}{-4} \leq \frac{5}{6}$
9. $12.6 \geq -6(a + 2)$
10. $14.7 \leq 3.5(b - 4)$

In Exercises 11–22, solve the inequality. Graph the solution, if possible. *Examples 2 and 3*

11. $4 - 2m > 7 - 3m$
12. $8n + 2 \leq 8n - 9$
13. $-2d - 2 < 3d + 8$
14. $8 + 10f > 14 - 2f$
15. $8g - 5g - 4 \leq -3 + 3g$
16. $3w - 5 > 2w + w - 7$
17. $6(\ell + 3) < 3(2\ell + 6)$
18. $2(5c - 7) \geq 10(c - 3)$
19. $4\left(\frac{1}{2}t - 2\right) > 2(t - 3)$
20. $15\left(\frac{1}{3}b + 3\right) \leq 6(b + 9)$
21. $9j - 4.5 + 6j \geq 3(5j - 1.5)$
22. $6h - 6 + 3.4h < 2(4.7h - 3)$

ERROR ANALYSIS **In Exercises 23 and 24, describe and correct the error in solving the inequality.**

23.

$$\frac{x}{4} + 6 \geq 3$$
$$x + 6 \geq 12$$
$$x \geq 6$$

24.

$$-2(1 - x) \leq 2x - 7$$
$$-2 + 2x \leq 2x - 7$$
$$-2 \leq -7$$

All real numbers are solutions.

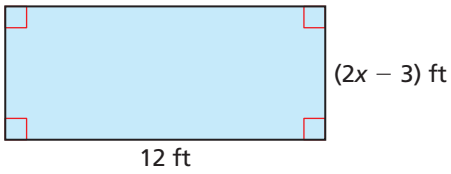
25. **MODELING REAL LIFE** You want an average of at least 30 active minutes each day during the week. How many active minutes do you need on Sunday to achieve your goal? Make an argument for your answer using a bar graph. *Example 4*

Day	Minutes exercising
Monday	15
Tuesday	45
Wednesday	20

Day	Minutes exercising
Thursday	0
Friday	60
Saturday	30

26. **MODELING REAL LIFE** Bowling alley A charges \$3.75 to rent shoes and \$4 per game. Bowling alley B charges \$2.50 to rent shoes and \$4.50 per game.
   a. For what numbers of games is the total cost, including a pair of rental shoes, less at bowling alley A? at bowling alley B?
   b. Bowling alley A increases the cost per game by \$0.50. How does this affect your answer in part (a)? Explain.

27. **CONNECTING CONCEPTS** The area of the rectangle is greater than 60 square feet. Find the possible values of x.



28. **MAKING AN ARGUMENT** Your friend says that the inequality $5x - 2 > 5x - 4$ has no solution because the equation $5x - 2 = 5x - 4$ has no solution. Is your friend correct? Explain.

MP REASONING **In Exercises 29 and 30, find the value of a for which the solutions of the inequality are all real numbers.**

29. $a(x + 3) < 5x + 15 - x$
30. $3x + 8 + 2ax \geq 3ax - 4a$
31. **MP STRUCTURE** Complete the inequality so that it has no solution.

$$-3(2x + 1) < \square x + \square x + \square$$