

Translate the verbal phrase into an inequality. Then graph the inequality.

- All real numbers that are less than 5 $x < 5$ **1–4. See margin for art.**
- All real numbers that are greater than or equal to -1 $x \geq -1$
- All real numbers that are greater than -2 and less than or equal to 7 $-2 < x \leq 7$
- All real numbers that are greater than 8 or less than -4 $x > 8$ or $x < -4$

Solve the inequality, if possible. Graph your solution. **5–22. See margin for art.**

- | | | |
|---|---|---|
| 5. $x - 9 \geq -5$ $x \geq 4$ | 6. $-2 > 5 + y$ $y < -7$ | 7. $-0.8 \leq z + 7.7$ $z \geq -8.5$ |
| 8. $5m \geq 35$ $m \geq 7$ | 9. $\frac{n}{6} < -1$ $n < -6$ | 10. $\frac{r}{-3} \leq 4$ $r \geq -12$ |
| 11. $-4s < 6s + 1$ $s > -0.1$ | 12. $4t - 7 \leq 13$ $t \leq 5$ | 13. $-8 > 5 - v$ $v > 13$ |
| 14. $3(5w + 4) < 12w - 11$
$w < -\frac{7}{3}$ | 15. $4p - 3 > 2(2p + 1)$
no solution | 16. $9q - 12 \geq 3(3q - 4)$
all real numbers |
| 17. $-2 \leq 4\frac{2}{3} - 3a \leq 13$
$-3 \leq a \leq 2$ | 18. $-7 < 2c - 1 < 10\frac{1}{2}$
$-3 < c < 5.75$ | 19. $-5 \leq 2 - h$ or $6h + 5 \geq 71$
$h \leq 7$ or $h \geq 11$ |
| 20. $ 2d + 8 > 3$
$d < -5.5$ or $d > -2.5$ | 21. $2 3f - 7 + 5 < 11$
$1\frac{1}{3} < f < 3\frac{1}{3}$ | 22. $ j - 7 - 1 \leq 3\frac{5}{6}$
$2\frac{1}{6} \leq j \leq 11\frac{5}{6}$ |

Solve the equation, if possible.

- | | | |
|--|---|--|
| 23. $-\frac{3}{4} x - 3 = \frac{1}{4}$
no solution | 24. $ 3y + 1 - 6 = -2$ $1, -\frac{2}{3}$ | 25. $4 2z + 5 + 9 = 5$
no solution |
|--|---|--|

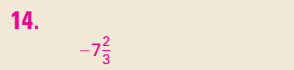
Check whether the ordered pair is a solution of the inequality.

- | | | |
|--|---|---------------------------------------|
| 26. $2x - y < 4$; (2, -1)
not a solution | 27. $y + 3x \geq -5$; (-3, -4)
not a solution | 28. $y \leq -3$; (4, -7)
solution |
|--|---|---------------------------------------|

Graph the inequality. **29–31. See margin.**

- | | | |
|-----------------|---------------------|-----------------|
| 29. $y < x + 4$ | 30. $y \geq 2x - 5$ | 31. $y \geq -6$ |
|-----------------|---------------------|-----------------|
32. **BUSINESS** Your friend is starting a small business baking and decorating cakes and wants to make a profit of at least \$250 for the first month. The expenses for the first month are \$155. What are the possible revenues that your friend can earn in order to meet the profit goal? **at least \$405**
33. **BICYCLES** A manufacturer of bicycle parts requires that a bicycle chain have a width of 0.3 inch with an absolute error of at most 0.0003 inch. Find the possible widths of bicycle chains that the manufacturer will accept. **0.2997 in. up to 0.3003 in.**
34. **HORSES** You are planning to ride a horse to a campsite. The sum of your weight x (in pounds) and the combined weight y (in pounds) of your camping supplies can be at most 20% of the weight of the horse.
- Suppose that the horse weighs 1000 pounds. Write and graph an inequality that describes the possible combinations of your weight and the combined weight of the camping supplies. $x + y \leq 200$; see margin for art.
 - Identify and interpret one of the solutions of the inequality in part (a).
Sample answer: (130, 60); if you weigh 130 pounds and the combined weight of your camping supplies is 60 pounds, the combined weight is 190, so you will be able to ride the horse to the campsite.

Chapter Test 419



Additional Resources

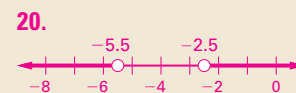
Assessment Book

- Chapter Test, Levels A, B, C, pp. 78–83
- Standardized Chapter Test, pp. 84–85
- SAT/ACT Chapter Test, pp. 86–87
- Alternative Assessment, pp. 88–89

Test Generator CD-ROM

Chapter Test

Easily-readable reduced copies (with answers) of Chapter Test B, the Standardized Chapter Test, and the Alternative Assessment from the Assessment Book can be found on pp. 354G–354H.



29–31. See Additional Answers beginning on p. AA1.

