

## 5-1 Skills Practice

### Solving Inequalities by Addition and Subtraction

Match each inequality to the graph of its solution.

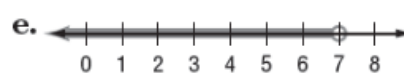
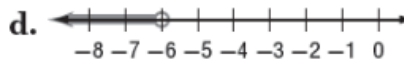
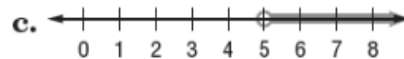
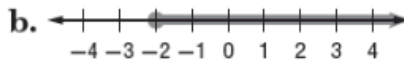
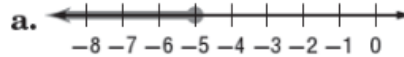
1.  $x + 11 > 16$

2.  $x - 6 < 1$

3.  $x + 2 \leq -3$

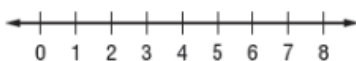
4.  $x + 3 \geq 1$

5.  $x - 1 < -7$

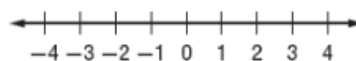


Solve each inequality. Check your solution, and then graph it on a number line.

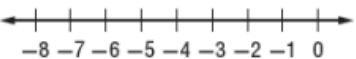
6.  $d - 5 \leq 1$



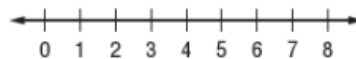
7.  $t + 9 < 8$



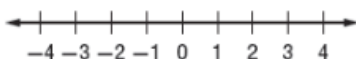
8.  $a - 7 > -13$



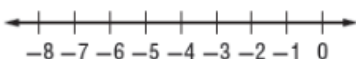
9.  $w - 1 < 4$



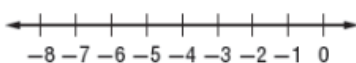
10.  $4 \geq k + 3$



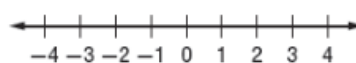
11.  $-9 \leq b - 4$



12.  $-2 \geq x + 4$



13.  $2y < y + 2$



**5-2 Practice****Solving Inequalities by Multiplication and Division**

Match each inequality with its corresponding statement.

- |                          |   |
|--------------------------|---|
| 1. $-4n \geq 5$          | a. Negative four times a number is less than five.    |
| 2. $\frac{4}{5}n > 5$    | b. Four fifths of a number is no more than five.      |
| 3. $4n \leq 5$           | c. Four times a number is fewer than five.            |
| 4. $\frac{4}{5}n \leq 5$ | d. Negative four times a number is no less than five. |
| 5. $4n < 5$              | e. Four times a number is at most five.               |
| 6. $-4n < 5$             | f. Four fifths of a number is more than five.         |

Solve each inequality. Check your solution.

- |                         |                   |                           |                |
|-------------------------|-------------------|---------------------------|----------------|
| 7. $-\frac{a}{5} < -14$ | 8. $-13h \leq 52$ | 9. $\frac{b}{16} \geq -6$ | 10. $39 > 13p$ |
|-------------------------|-------------------|---------------------------|----------------|

- |                          |                          |                             |                              |
|--------------------------|--------------------------|-----------------------------|------------------------------|
| 11. $\frac{2}{3}n > -12$ | 12. $-\frac{5}{9}t < 25$ | 13. $-\frac{3}{5}m \leq -6$ | 14. $\frac{10}{3}k \geq -10$ |
| 15. $-3b \leq 0.75$      | 16. $-0.9c > -9$         | 17. $0.1x \geq -4$          | 18. $-2.3 < \frac{j}{4}$     |
| 19. $-15y < 3$           | 20. $2.6v \geq -20.8$    | 21. $0 > -0.5u$             | 22. $\frac{7}{8}f \leq -1$   |

Define a variable, write an inequality, and solve each problem. Check your solution.

23. Negative three times a number is at least 57.
24. Two thirds of a number is no more than  $-10$ .
25. Negative three fifths of a number is less than  $-6$ .

**5-3 Practice****Solving Multi-Step Inequalities**

Justify each indicated step.

$$1. \quad x > \frac{5x - 12}{8}$$

$$8x > (8) \frac{5x - 12}{8} \quad \text{a. } \underline{\quad ? \quad}$$

$$8x > 5x - 12$$

$$8x - 5x > 5x - 12 - 5x \quad \text{b. } \underline{\quad ? \quad}$$

$$3x > -12$$

$$\frac{3x}{3} > \frac{-12}{3} \quad \text{c. } \underline{\quad ? \quad}$$

$$x > -4$$

$$2. \quad 2(2h + 2) < 2(3h + 5) - 12$$

$$4h + 4 < 6h + 10 - 12 \quad \text{a. } \underline{\quad ? \quad}$$

$$4h + 4 < 6h - 2$$

$$4h + 4 - 6h < 6h - 2 - 6h \quad \text{b. } \underline{\quad ? \quad}$$

$$-2h + 4 < -2$$

$$-2h + 4 - 4 < -2 - 4 \quad \text{c. } \underline{\quad ? \quad}$$

$$-2h < -6$$

$$\frac{-2h}{-2} > \frac{-6}{-2} \quad \text{d. } \underline{\quad ? \quad}$$

$$h > 3$$

Solve each inequality. Check your solution.

3.  $-5 - \frac{t}{6} \geq -9$

4.  $4u - 6 \geq 6u - 20$

5.  $13 > \frac{2}{3}a - 1$

6.  $\frac{w + 3}{2} < -8$

7.  $\frac{3f - 10}{5} > 7$

8.  $h \leq \frac{6h + 3}{5}$

9.  $3(z + 1) + 11 < -2(z + 13)$

10.  $3r + 2(4r + 2) \leq 2(6r + 1)$

11.  $5n - 3(n - 6) \geq 0$

Define a variable, write an inequality, and solve each problem. Check your solution.

12. A number is less than one fourth the sum of three times the number and four.

13. Two times the sum of a number and four is no more than three times the sum of the number and seven decreased by four.