

# Practice 1-4

## Solving Inequalities

Solve each inequality. Graph the solutions.

- |                       |   |                                   |
|-----------------------|---|-----------------------------------|
| 1. $16 - 4t \leq 36$  | 2. $2(m + 3) + 1 > 23$                  | 3. $7 + 13(x + 1) \leq 3x$        |
| 4. $-6a < 21$         | 5. $\frac{2}{3}(4x + 5) > \frac{9}{4}x$ | 6. $2[5x - (3x - 4)] < 3(2x + 3)$ |
| 7. $8(x - 5) \geq 56$ | 8. $6 - x \leq 7x + 3$                  | 9. $10 - x \geq -2(3 + x)$        |

Solve each compound inequality. Graph the solutions.

- |                                       |   |
|---------------------------------------|---|
| 10. $-9 \leq 4x + 3 \leq 11$          | 11. $16x \leq 32$ or $-5x < -40$            |
| 12. $9x < 54$ and $-4x < 12$          | 13. $6(x + 2) \geq 24$ or $5x + 10 \leq 15$ |
| 14. $14 > 3x - 1 \geq -10$            | 15. $4 < 1 - 3x < 7$                        |
| 16. $2(x - 1) < -4$ or $2(x - 1) > 4$ | 17. $3x - 5 \geq -8$ and $3x - 5 \leq 1$    |

Solve each problem by writing an inequality.

- A salesperson earns \$350 per week plus 10% of her weekly sales. Find the sales necessary for the salesperson to earn at least \$800 in one week.
- The length of a rectangular yard is 50 ft, and its perimeter is less than 170 ft. Describe the width of the yard.
- Xul is two years older than his sister Maria. The sum of their ages is greater than 32. Describe Maria's age.
- A research team estimates that 30% of their questionnaires will not be returned. How many questionnaires should they mail out in order to be reasonably certain that at least 750 will be returned?

Solve each problem by writing a compound inequality.

- Watermelons cost \$.39 per pound at a local market. Kent's watermelon cost between \$4.00 and \$5.00. What are the possible weights of his watermelon?
- How much must a carpenter cut off a 48-inch board if the length must be  $40 \pm 0.25$  inches?
- A concrete slab requires between 10 and 12  $\text{yd}^3$  of concrete. If 2.5  $\text{yd}^3$  of concrete can be poured each hour, how long will it take to pour the slab?

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