

**Challenge: Skills and Applications**

For use with pages 340–345

**In Exercises 1–6, solve the inequality.**

1.  $3x - \frac{1}{2} < \frac{1}{2}x + 7$
2.  $4(5 - a) \geq 2(10 + 2a)$
3.  $\frac{3}{4}w - 6 > 3 + w$
4.  $7(2t + 1) \leq 2(7t - 3)$
5.  $0.4(y + 9) < -1.2(8 - y)$
6.  $4r - 7 \geq 13 - 4(5 - r)$

**In Exercises 7–8, use the following information.**

Music Club A offers each new subscriber 3 free tapes, after which each tape costs \$7. Music Club B offers new subscribers 5 free tapes, after which each tape costs \$9.

7. Write an inequality that states that the cost of  $n$  tapes from Club A is less than the cost of  $n$  tapes from Club B.
8. For what number of tapes is it cheaper to buy from Club A? Assume that a subscriber to either club wants at least 6 tapes.

**In Exercises 9–10, write an inequality with a variable on both sides that satisfies the three given conditions.**

9.
  - At least three operations are used.
  - The inequality sign shown is  $\geq$ .
  - The solution is  $x \geq 2\frac{1}{2}$ .
10.
  - At least one set of parentheses is used.
  - The inequality sign shown is  $<$ .
  - The solution is  $x > -5$ .