

## LESSON

**Practice B****8-8****Solving Radical Equations and Inequalities**

Solve each equation.

1.  $\sqrt{x+6} = 7$

2.  $\sqrt{5x} = 10$

3.  $\sqrt{2x+5} = \sqrt{3x-1}$

4.  $\sqrt{x+4} = 3\sqrt{x}$

5.  $\sqrt[3]{x-6} = \sqrt[3]{3x+24}$

6.  $3\sqrt[3]{x} = \sqrt[3]{7x+5}$

7.  $\sqrt{-14x+2} = x-3$

8.  $(x+4)^{\frac{1}{2}} = 6$

9.  $4(x-3)^{\frac{1}{2}} = 8$

10.  $4(x-12)^{\frac{1}{3}} = -16$

Solve each inequality.

11.  $\sqrt{3x+6} \leq 3$

12.  $\sqrt{x-4} + 3 > 9$

13.  $\sqrt{x+7} \geq \sqrt{2x-1}$

14.  $\sqrt{2x-7} > 9$

Solve.

15. A biologist is studying two species of animals in a habitat. The population,  $p_1$ , of one of the species is growing according to  $p_1 = 500t^{\frac{2}{3}}$  and the population,  $p_2$ , of the other species is growing according to  $p_2 = 100t^2$  where time,  $t$ , is measured in years. After how many years will the populations of the two species be equal?