

6-5 Practice

Form K

Solve. To start, rewrite the equation to isolate the radical.

1. $\sqrt{x+2}-2=0$

2. $\sqrt{2x+3}-7=0$

3. $2+\sqrt{3x-2}=6$

$$\sqrt{x+2}=2$$

Solve.

4. $2(x-2)^{\frac{2}{3}}=50$

5. $2(x+3)^{\frac{3}{2}}=54$

6. $(6x-5)^{\frac{1}{3}}+3=-2$

7. The formula $d = 2\sqrt{\frac{V}{\pi h}}$ relates the diameter d , in units, of cylinder to its volume V , in cubic units, and its height h , in units. A cylindrical can has a diameter of 3 in. and a height of 4 in. What is the volume of the can to the nearest cubic inch?

8. **Writing** Explain the difference between a radical equation and a polynomial equation.

9. **Reasoning** If you are solving $4(x+3)^{\frac{3}{4}}=7$, do you need to use the absolute value to solve for x ? Why or why not?

Solve. Check for extraneous solutions. First, isolate the radical, then square each side of the equation.

10. $\sqrt{4x+5} = x+2$

$$(\sqrt{4x+5})^2 = (x+2)^2$$

11. $\sqrt{-3x-5} - 3 = x$

12. $\sqrt{x+7} + 5 = x$

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

$$(\sqrt{2x-7})^2 = (\sqrt{x+2})^2$$

14. $\sqrt{3x+2} - \sqrt{2x+7} = 0$

15. $\sqrt{2x+4} - 2 = \sqrt{x}$

16. Find the solutions of $\sqrt{x+2} = x$.

a. Are there any extraneous solutions?

b. **Reasoning** How do you know the answer to part (a)?

17. A floor is made up of hexagon-shaped tiles. Each hexagon tile has an area of 1497 cm^2 . What is the length of each side of the hexagon? (*Hint: Six equilateral triangles make one hexagon.*)

