Graph the function and identify its domain and range. Compare the graph with the graph of $y = \sqrt{x}$.

1. $y = 3\sqrt{x}$
2. $y = -\sqrt{x}$
3. $y = \sqrt{x - 5}$
4. $y = -\sqrt{x - 1} + 4$

Simplify the expression.

5. $\sqrt{72m^6}$
6. $\sqrt{8z^3} \cdot \sqrt{6z^3}$
7. $\sqrt{\dfrac{20}{3n^3}}$

8. $7\sqrt{6} - 2\sqrt{12} + \sqrt{24}$
9. $\sqrt{3}(7 - \sqrt{15})$
10. $(8 - \sqrt{7})(1 + \sqrt{7})$

Solve the equation. Check for extraneous solutions.
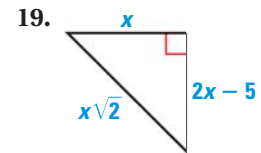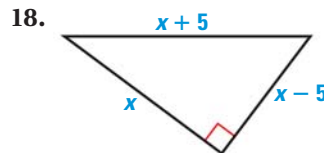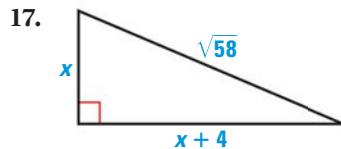
11. $\sqrt{x} = 8$
12. $\sqrt{x + 5} - 6 = -2$
13. $-4\sqrt{3x} - 6 = 30$

14. $\sqrt{5x - 11} = \sqrt{x}$
15. $\sqrt{x + 7} = \sqrt{2x - 3}$
16. $x = \sqrt{12 - x}$

Find the unknown lengths.

17.

18.

19.

Tell whether the triangle with the given side lengths is a right triangle.

20. 8, 16, 32
21. 11, 60, 61
22. 7.5, 10, 12.5

Find the distance between the given points. Then find the midpoint of the line segment whose endpoints are the given points.
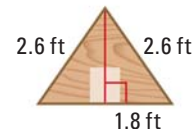
23. (6, 6), (9, 10)
24. (−8, 7), (4, 3)
25. $\left(5, -\dfrac{3}{2}\right), \left(-2, \dfrac{9}{2}\right)$

26. LADDERS A ladder that is 25 feet long is placed against a house. The bottom of the ladder is 10 feet from the base of the house. How far up the house does the ladder reach? Round your answer to the nearest tenth of a foot.

27. BIRD HOUSES The front view of a bird house is shown. Find the height of the house to the nearest tenth of a foot.

28. LACROSSE Two lacrosse players are playing on a field, as shown. The distance between consecutive grid lines represents 2 meters.

a. How far is each player from the ball? Round your answer to the nearest tenth of a meter.

b. Both players start running toward the ball. Player A can run at a rate of 6 meters per second. Player B can run at a rate of 7 meters per second. Who will reach the ball first?