

2.6 Practice Set

1. What is an “extraneous” solution?
2. When can the Pythagorean Theorem be used? What condition(s) must be met?
3. Describe the technique for solving an equation that has two different radicals with the variable in the radicands.
4. What is a common error when solving radical equations?

Solve each of the following equations for the indicated variable.

5. $\sqrt{3x} = 9$
6. $\sqrt{x - 5} = 2$
7. $\sqrt{6x} = -5$
8. $\sqrt{3x - 5} - 8 = 0$
9. $\sqrt{4x - 7} - 4 = 1$
10. $\sqrt[3]{2x} = -3$
11. $\sqrt[3]{x - 4} - 2 = 1$
12. $\sqrt{54 - y} - 2 = y$
13. $\sqrt{8 - 7z} = 16 + z$
14. $\sqrt{y + 2} + \sqrt{y - 1} = 1$
15. $\sqrt{a - 28} = 7 - \sqrt{a + 7}$
16. $\sqrt{3x - 2} + 4 = 0$

17. $\sqrt[4]{2x-1} - 3 = 0$

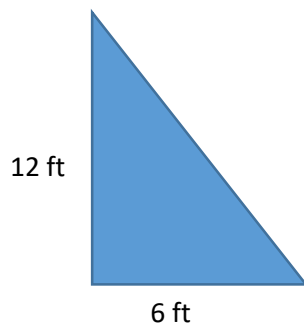
18. $\sqrt[3]{4x-3} + 5 = 0$

19. $s + 10 = \sqrt{2-s}$

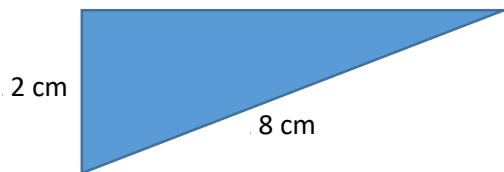
20. $3 + \sqrt{3z-2} = 5 + \sqrt{z}$

Find the length of the missing side of the given right triangle.

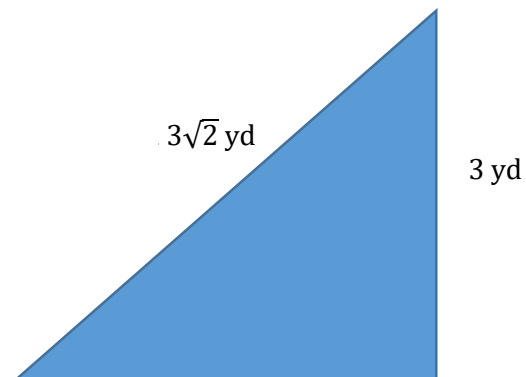
21.



22.



23.



24. A 30 foot ladder is required to reach the top of a house. If the bottom of the ladder is 5 feet away from the house, how tall is the house?
25. If a spotlight is placed 12 feet up on the side of a house and the light extends in a straight path 22 feet from its mounted location on the house to the ground, how far away from the house along the ground does the light illuminate?

Distributed Practice Problems

Perform the indicated operation and/or simplify each of the following.

Assume that all variables represent positive real numbers and rationalize all denominators.

26. $\sqrt[3]{\frac{3}{4}}$

27. $\sqrt[5]{\frac{32}{81a^2}}$

28. $\frac{7}{4+5\sqrt{2}}$

29. $\frac{(16x^{-4}y^{10})^{\frac{1}{2}}}{(8x^6y^{-1})^{-\frac{4}{3}}}$

30. $(-25)^{-\frac{3}{2}}$