

4.5 Equation Solving

Name _____

Solve.

1. $\sqrt{3x} = 6$

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

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

4. $\sqrt{x+11} = 4$

5. $\sqrt[3]{2x} = -4$

6. $\sqrt[3]{x-1} = 3$

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

8. $\sqrt{4x+3} = \sqrt{3x+6}$

Answers: 1. {12}; 3. {14}; 5. {-32}; 7. {4}

Solve.

9. $\sqrt{10x-24} = x$

10. $\sqrt{6x+10} = 2x$

11. $\sqrt{x-1} = x-1$

12. $\sqrt{2x-1} = 2x-1$

Answers: **9.** {4, 6}; **11.** {1, 2}

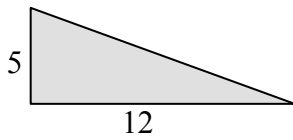
Solve.

13. $\sqrt{2x^2 + 5x + 6} = x$

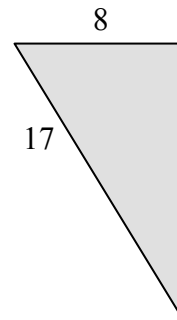
14. $\sqrt{2x^2 + 6x + 9} = x$

Find the length of the unknown side of each right triangle.

15.



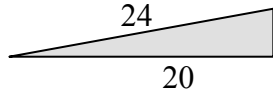
16.



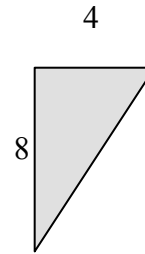
Answers: 13. \emptyset ; 15. 13

Find the length of the unknown side of each right triangle. Write your answer in simplified radical form.

17.



18.



19. One end of a cable has to be attached to the top of a 30 ft. pole, while the other end is to be anchored 12 feet from the base of the pole. How much cable is needed?



20. A 10-foot ladder leans against a wall. The base of the ladder is separated 2 feet from the wall. How far above the ground does the top of the ladder touch the wall?



Answer: 17. $4\sqrt{11}$; 19. ≈ 32.3 feet