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**. $\{1, 2\}$

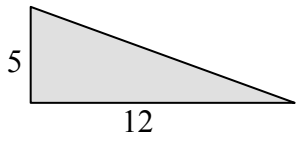
Solve.

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

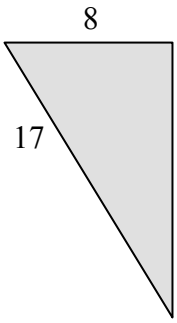
14. $\sqrt{2x^2+6x+9}=x$

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

15.



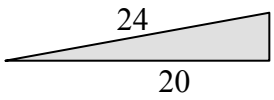
16.



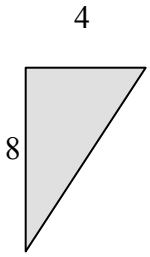
Answers: **13**. ∅; **15.** 13

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

17.

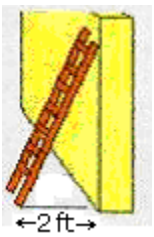


18.



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