

Simplify.

1. $6\sqrt{5} - 2\sqrt{5} + 8\sqrt{5}$

2. $\sqrt{15} + 8\sqrt{15} - 12\sqrt{15}$

3. $4\sqrt{3} + 2\sqrt{12}$

4. $8\sqrt{54} - 4\sqrt{6}$

5. $8\sqrt{32} - 4\sqrt{8}$

6. $2\sqrt{45} + 4\sqrt{20}$

7. $5\sqrt{128} + 2\sqrt{18}$

8. $3\sqrt{75} - \sqrt{243}$

9. $11\sqrt{96} + \sqrt{150} - 8\sqrt{18}$

10. $3\sqrt{98} + 2\sqrt{112} - 6\sqrt{343}$

11. $\sqrt{63} - \sqrt{112} + \sqrt{126}$

12. $\sqrt{90} + \sqrt{162} - \sqrt{450}$

13. $\sqrt{5} + \sqrt{\frac{1}{5}}$

14. $\sqrt{14} - \sqrt{\frac{2}{7}}$

15. $4\sqrt{5} - 2\sqrt{45} - 4\sqrt{\frac{1}{5}}$

16. $-\sqrt{27} + 6\sqrt{3} + 5\sqrt{\frac{1}{3}}$

17. $8\sqrt{\frac{15}{4}} - 10\sqrt{\frac{3}{20}} + 6\sqrt{15}$

18. $\sqrt{\frac{3}{5}} + \sqrt{\frac{5}{3}} + \sqrt{\frac{5}{3}}$

Solve and check.

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

20. $\sqrt{4x} = 6$

21. $\sqrt{2x - 1} = 5$

22. $\sqrt{3x - 2} = 4$

23. $\sqrt{m} = 2\sqrt{3}$

24. $\sqrt{n} = 4\sqrt{3}$

25. $\sqrt{x + 5} = x - 1$

26. $\sqrt{y - 2} = y - 2$

27. $\sqrt{\frac{9a}{3}} - 4 = 0$

28. $\sqrt{\frac{12a}{3}} = 4$

29. $\sqrt{m} = 2\sqrt{3}$

30. $\sqrt{5r} = 6\sqrt{2}$

31. $8\sqrt{3x^2 - 43} = 40$

32. $3\sqrt{4x^2 + 3} = 36$

33. $\sqrt{12x^2 - 75} = 3x$

34. $\sqrt{2x^2 - 9} = x$

35. $\sqrt{x + 5} = x - 1$

36. $\sqrt{5x - 1} - x = 1$

Ch. 10 Review

Name _____

For exercises 1-10, c is the measure of the hypotenuse of a right triangle. Find each missing measure.

1. $a = 3, b = 4, c = ?$
2. $a = 6, c = 10, b = ?$
3. $b = 12, c = 13, a = ?$
4. $a = 6, c = 12, b = ?$
5. $b = 4, c = 8, a = ?$
6. $a = 6, b = 10, c = ?$
7. $b = 8, c = 10, a = ?$
8. $a = 5, c = 13, b = ?$
9. $a = 8, c = 17, b = ?$
10. $a = \sqrt{6}, b = \sqrt{5}, c = ?$

The measures of three sides of a triangle are given in each exercise. Determine whether each triangle is a right triangle.

11. 20, 21, 39
12. 15, 30, 34
13. 9, $\sqrt{12}$, 15
14. 21, 72, 75

Solve.

15. Find the length of the diagonal of a rectangle whose length is 12 cm and whose width is 5 cm.

17. Find the hypotenuse of a right triangle whose legs are $2\sqrt{3}$ m and $\sqrt{20}$ m.

16. Find the length of the long side of a right triangle whose hypotenuse is 14 in. and whose shorter leg is 6 in.
18. Find the length of the diagonal of a rectangle whose length is 8 ft and whose width is $3\sqrt{8}$ ft.

Find the distance between each pair of points whose coordinates are given.

19. (3, 4), (1, -2)
20. (7, 2), (1, -4)
21. (-1, -4), (-6, 0)
22. (-3, -1), (-11, 3)
23. (-3, -8), (-7, 2)
24. (0, -4), (5, 2)

The coordinates of a pair of points are given in each of the following. Find two possible values for a if the points are the given distance apart.

25. (2, 5), (4, 5); $d = 3$
26. (1, 4), (-2, a); $d = \sqrt{34}$
27. (a , 4), (-3, -2); $d = \sqrt{61}$
28. (-6, a), (-3, 9); $d = 5$

Extra Practice, [Answers](#)

Solve each right triangle. State the side lengths to the nearest tenth and the angle measures to the nearest degree.

