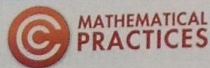




## Practice and Problem-Solving Exercises



## A Practice

Simplify if possible.

10.  $5\sqrt{6} + \sqrt{6}$

11.  $6\sqrt[3]{3} - 2\sqrt[3]{3}$

12.  $4\sqrt{3} + 4\sqrt[3]{3}$

13.  $3\sqrt{x} - 5\sqrt{x}$

14.  $14\sqrt{x} + 3\sqrt{y}$

15.  $7\sqrt[3]{x^2} - 2\sqrt[3]{x^2}$

See Problem 1.

16. The design of a garden path uses stone pieces shaped as squares with a side length of 15 in. Find the length of the path.



See Problem 2.

Simplify.

17.  $6\sqrt{18} + 3\sqrt{50}$

18.  $14\sqrt{20} - 3\sqrt{125}$

19.  $\sqrt{18} + \sqrt{32}$

20.  $\sqrt[3]{54} + \sqrt[3]{16}$

21.  $3\sqrt[3]{81} - 2\sqrt[3]{54}$

22.  $\sqrt[4]{32} + \sqrt[4]{48}$

See Problem 3.

Multiply.

23.  $(3 + \sqrt{5})(1 + \sqrt{5})$

24.  $(2 + \sqrt{7})(1 + 3\sqrt{7})$

25.  $(3 - 4\sqrt{2})(5 - 6\sqrt{2})$

26.  $(\sqrt{3} + \sqrt{5})^2$

27.  $(\sqrt{13} + 6)^2$

28.  $(2\sqrt{5} + 3\sqrt{2})^2$

See Problem 4.

Multiply each pair of conjugates.

29.  $(5 - \sqrt{11})(5 + \sqrt{11})$

30.  $(4 - 2\sqrt{3})(4 + 2\sqrt{3})$

31.  $(2\sqrt{6} + 8)(2\sqrt{6} - 8)$

32.  $(\sqrt{3} + \sqrt{5})(\sqrt{3} - \sqrt{5})$

See Problem 5.

Rationalize each denominator. Simplify your answer.

33.  $\frac{4}{1 + \sqrt{3}}$

34.  $\frac{4}{3\sqrt{3} - 2}$

35.  $\frac{5 + \sqrt{3}}{2 - \sqrt{3}}$

36.  $\frac{3 + \sqrt{8}}{2 - 2\sqrt{8}}$

See Problem 6.