



NAME _____

Module 17 Simplifying Radical Expressions
Lesson 3 Multiplying Radicals

Lesson Objective

- Multiply radicals.

For nonnegative numbers a and b , the Product Property of Square Roots is

$\sqrt{ab} = \sqrt{a} \cdot \sqrt{b}$ _____

For any numbers a and b , the Product Property of Cube Roots is

$\sqrt[3]{ab} = \sqrt[3]{a} \cdot \sqrt[3]{b}$ _____

For a nonnegative number x , $\sqrt{x} \cdot \sqrt{x} = x$ _____

1 Simplify: $7\sqrt{30} \cdot 2\sqrt{6}$ $84\sqrt{5}$ _____

2 Simplify: $\sqrt[3]{9k} \cdot \sqrt[3]{6k}$ $3\sqrt[3]{2k^2}$ _____

When multiplying radical expressions with a monomial times a binomial, use the distributive property.

3 Simplify: $\sqrt{6}(3 - \sqrt{3})$ $3\sqrt{6} - 3\sqrt{2}$ _____

4 Simplify: $\sqrt{2}(\sqrt{3} - \sqrt{32})$ $\sqrt{6} - 8$ _____

When multiplying radical expressions with a binomial times a binomial, the **FOIL** _____ method can be used.

5 Simplify: $(\sqrt{2} + \sqrt{6})^2$ $8 + 4\sqrt{3}$ _____

6 Simplify: $(2 + \sqrt{x})(2 - \sqrt{x})$ $4 - x$ _____

