

11-2

Operations With Radical Expressions

1 EXAMPLE Combining Like Radicals

Simplify $\sqrt{2} + 3\sqrt{2}$.

1 Simplify each expression.

a. $-3\sqrt{5} - 4\sqrt{5}$

b. $\sqrt{10} - 5\sqrt{10}$

2 EXAMPLE Simplifying to Combine Like Radicals

Simplify $7\sqrt{3} - \sqrt{12}$.

2 Simplify each expression.

a. $3\sqrt{20} + 2\sqrt{5}$

b. $3\sqrt{3} - 2\sqrt{27}$

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3 EXAMPLE Using the Distributive Property

Simplify $\sqrt{3}(\sqrt{6} + 7)$.

3 Simplify each radical expression.

a. $\sqrt{5}(2 + \sqrt{10})$

b. $\sqrt{2x}(\sqrt{6x} - 11)$

c. $\sqrt{5a}(\sqrt{5a} + 3)$

4 EXAMPLE Simplifying Using FOIL

Simplify $(\sqrt{5} - 2\sqrt{15})(\sqrt{5} + \sqrt{15})$.

4 Simplify each radical expression.

a. $(2\sqrt{6} + 3\sqrt{3})(\sqrt{6} - 5\sqrt{3})$

b. $(\sqrt{7} + 4)^2$

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