

SC Algebra 1
8.6 Operations with Radicals
Warm Up:

Simplify.

1. $3x^2 - 9xy + 4xy + 7x^2$

2. $6(c - 2d) + 4(3 + d)$

3. $\sqrt{5} * \sqrt{20}$

4. $\sqrt{4x^3y^5}$

5. $\sqrt{\frac{32}{49}}$

Example 1: Add and Subtract Expressions with Like Radicands

Simplify.

$$4\sqrt{5} + 3\sqrt{7} - 2\sqrt{5} + 7\sqrt{7}$$

$$3\sqrt{5} - 3\sqrt{5}$$

$$8\sqrt{3} - 8\sqrt{11} + 2\sqrt{3} + 3\sqrt{11}$$

$$3\sqrt{5} + 3\sqrt{7}$$

Example 2: Add and Subtract Expressions with Unlike Radicands

Simplify.

$$3\sqrt{75} - 6\sqrt{48} - \sqrt{27}$$

$$5\sqrt{28} + 3\sqrt{175} - \sqrt{63}$$

How can I meet today's standards?

*I can **rewrite radicals in order to add, subtract, or multiply radical expressions.***

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Example 3: Multiply Radical Expressions

Simplify.

$$5\sqrt{3} * 4\sqrt{6}$$

$$2\sqrt{5} * 7\sqrt{8}$$

$$3\sqrt{10} * (-9\sqrt{6})$$

Example 4: Multiply Radical Expressions

Simplify.

$$-4\sqrt{6}(7\sqrt{12} - 4\sqrt{8})$$

$$4\sqrt{7}(2\sqrt{8} + 3\sqrt{7})$$

$$3\sqrt{11}(2\sqrt{2} + 4\sqrt{11})$$