

Accuplacer Study Modules

TOPIC: Adding and Subtracting Radicals

Khan Academy Link:

Sample Problem #1: Like Radicands

Simplify $5\sqrt{10} - 7\sqrt{10}$

If the radical expressions have the same radicand (the number under the square root), you can subtract the numbers on the outside and place that answer outside the radical.

$$5\sqrt{10} - 7\sqrt{10}$$

$$(5 - 7)\sqrt{10}$$

$$-2\sqrt{10}$$

Sample Problem #2: Unlike Radicands

Simplify $3\sqrt{12} + 2\sqrt{27}$

If the radical expressions do not have the same radicand, you must first simplify each radical so that they do. Once the radicands are the same, you can perform the operation as shown above.

$$3\sqrt{12} + 4\sqrt{27}$$

$$3\sqrt{4 \cdot 3} + 4\sqrt{9 \cdot 3}$$

$$3 \cdot 2\sqrt{3} + 4 \cdot 3\sqrt{3}$$

$$6\sqrt{3} + 12\sqrt{3}$$

$$18\sqrt{3}$$

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Instructions: Perform the indicated operation.

1. $2\sqrt{5} - 9\sqrt{5}$

2. $8\sqrt{30} + \sqrt{30}$

3. $6\sqrt{18} - 3\sqrt{75}$

4. $2\sqrt{50} + 5\sqrt{8}$