

Section 7.3: Adding and Subtracting Radical Expressions

Objectives:

- ✦ Use the distributive property to add and subtract like radicals.
- ✦ Use radical expressions in application problems.

$$5\sqrt{x^3} - x\sqrt{4x} + 3x\sqrt{x} =$$

Like radicals can be added or subtracted using their coefficients.

① EXAMPLE

Combine these where possible.

a) $5\sqrt{3} - 2\sqrt{3}$

b) $12\sqrt{8} - 3\sqrt[3]{8}$

c) $14\sqrt[5]{2} - 6\sqrt[5]{2}$

d) $5\sqrt{12} + 16\sqrt{27}$

② EXAMPLE

Combine these where possible.

a) $\sqrt[3]{54x} - \sqrt[3]{2x^4}$

b) $\sqrt{9x-9} - \sqrt{x^3-x^2}$

c) $6\sqrt{x} - \sqrt[3]{4} - 5\sqrt{x} + 2\sqrt[3]{4}$

d) $5\sqrt{x^3} - x\sqrt{4x}$

f) $\frac{8}{\sqrt{5x}} + \sqrt{5x}$

g) $\sqrt{\frac{4}{3x^3}} + \sqrt{3x^3}$

Application:

Four corners are cut from a 4x8 foot sheet of wood. Find the perimeter of the remaining piece of wood.

