

Unit 4: Radical Expressions & Equations

4.4 Multiplying Radical Expressions

Multiplying radicals requires the same index. Then multiply the coefficients and multiply the radicands.

In general, $(m\sqrt[k]{a})(n\sqrt[k]{b}) = mn\sqrt[k]{ab}$, where k is a natural number, and m , n , a , and b are real numbers. If k is even, then $a \geq 0$ and $b \geq 0$.

ex. multiply [always ensure that final answers are in simplest radical form]

a) $(-3\sqrt{2x})(4\sqrt{6})$

b) $7\sqrt{3}(5\sqrt{5} - 6\sqrt{3})$

c) $(2\sqrt{7})(4\sqrt{75})$

d) $(8\sqrt{2} - 5)(9\sqrt{5} + 6\sqrt{10})$

e) $9\sqrt[3]{2w}(\sqrt[3]{4w} + 7\sqrt[3]{28})$

f) $(2\sqrt{6} + 3\sqrt{2})^2$



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