1.4B: Working with Radicals - Day 2

Ex. 1 Multiply each of the following:

a) $4\sqrt{5}\left(2\sqrt{8}-3\sqrt{5}\right)$

How? Distributive Property.
May need to simplify after multiplying.

b) $\left(2\sqrt{3}-\sqrt{5}\right)\left(4\sqrt{3}+2\sqrt{5}\right)$

c) $\left(2\sqrt{5}-\sqrt{3}\right)^2$

Ex. 2 Simplify each of the following:

a) $\dfrac{12+3\sqrt{12}}{4}$

☆ What is the GCF between 4, 6, 12?

b) $\dfrac{15\pm\sqrt{27}}{3}$ ⟵ Look familiar?

Ex. 3 Simplify - Rationalizing Denominators

a) $\frac{2}{\sqrt{5}}$

b) $\frac{3\sqrt{5}}{4\sqrt{2}}$

c) $\frac{5\sqrt{10}}{15\sqrt{20}}$

d) $\frac{1}{\sqrt[3]{2}}$

e) $\frac{1}{\sqrt[3]{32}}$

What if the denominator is a binomial?

e) $\frac{5}{2\sqrt{6}-\sqrt{3}}$

You must multiply by the **conjugate**.

The conjugate of a + b is a - b.
Change the sign between the two terms.

Why conjugates?
See a familiar pattern?

f) $\frac{\sqrt{2}+\sqrt{5}}{\sqrt{6}-\sqrt{10}}$