Diving Radical Expressions Day 2

Up to this point, we have simplified radical expressions that have *ONE* term in the denominator.

So, what if there are *TWO* terms? In other words, there is one term being added or subtracted to another term?

Ex) $\frac{2}{\sqrt{3}-7}$ <- there are two terms in the denominator, and one is a radical (which is NOT ALLOWED)

How do we get rid of the radical that is part of the denominator? We multiply the fraction by its ***conjugate.***

What is a conjugate? The ***conjugate of a rational expression*** is:

Ex: The conjugate of $\frac{2}{\sqrt{3}-7}$ is

Ex) Simplify $\frac{3}{\sqrt{2}-5}$
① Multiply the radical expression by it's conjugate.
②Set up -> We are going to multiply each numerator and each denominator
③ To simplify the numerator and denominator, multiply by distributing
④ Combine like terms and simplify as much as you can

Ex) Simplify $\frac{4}{2+\sqrt{3}}$

① Multiply the radical expression by it's conjugate.

②Set up -> We are going to multiply each numerator and each denominator

③ To simplify the numerator and denominator, multiply by distributing

④ Combine like terms and simplify as much as you can

Ex) Simplify $\frac{5}{\sqrt{2}-\sqrt{3}}$

① Multiply the radical expression by it's conjugate.

②Set up -> We are going to multiply each numerator and each denominator

③ To simplify the numerator and denominator, multiply by distributing

④ Combine like terms and simplify as much as you can

Ex) Simplify $\frac{4}{\sqrt{3}+\sqrt{5}}$

① Multiply the radical expression by it's conjugate.

②Set up -> We are going to multiply each numerator and each denominator

③ To simplify the numerator and denominator, multiply by distributing

④ Combine like terms and simplify as much as you can

Ex) Simplify $\frac{2}{2+4\sqrt{3}}$

① Multiply the radical expression by it's conjugate.

②Set up -> We are going to multiply each numerator and each denominator

③ To simplify the numerator and denominator, multiply by distributing

④ Combine like terms and simplify as much as you can

Ex) Simplify $\frac{5}{5-2\sqrt{3}}$

① Multiply the radical expression by it's conjugate.

②Set up -> We are going to multiply ech numerator and each denominator

③ To simplify the numerator and denominator, multiply by distributing

④ Combine like terms and simplify as much as you can

Ex) Simplify $\frac{3\sqrt{2}}{5+\sqrt{6}}$

① Multiply the radical expression by it's conjugate.

②Set up -> We are going to multiply each numerator and each denominator

③ To simplify the numerator and denominator, multiply by distributing

④ Combine like terms and simplify as much as you can

Ex) Simplify $\frac{2\sqrt{2}}{4-\sqrt{3}}$

① Multiply the radical expression by it's conjugate.

②Set up -> We are going to multiply each numerator and each denominator

③ To simplify the numerator and denominator, multiply by distributing

④ Combine like terms and simplify as much as you can