

Algebra 2C Notes

Name: _____

-2 Multiplying & Dividing Radical Expressions

Date: _____ Hr: _____

Objectives:

- To multiply and divide radical expressions.

Common Core Content Standard:

A.SSE.2 Use the structure of an expression to identify ways to rewrite it.

Take note

Property Combining Radical Expressions: Products

If $\sqrt[n]{a}$ and $\sqrt[n]{b}$ are real numbers, then $\sqrt[n]{a} \cdot \sqrt[n]{b} = \sqrt[n]{ab}$.

Example 1: Multiplying Radical Expressions

Can you simplify the product $\sqrt[4]{125} \cdot \sqrt[4]{405}$? Explain.

If you reduce a radical as much as possible, the radical is in _____ form.

Example 2: Simplifying a Radical Expression

What is the simplest form of $\sqrt[3]{135x^5}$?

Example 3: Simplifying a Product

What is the simplified form of $\sqrt{48x^5y^2} \cdot \sqrt{50x^2y^4}$?

Take note

Property Combining Radical Expressions: Quotients

If $\sqrt[n]{a}$ and $\sqrt[n]{b}$ are real numbers and $b \neq 0$, then $\frac{\sqrt[n]{a}}{\sqrt[n]{b}} = \sqrt[n]{\frac{a}{b}}$.

Example 4: Dividing Radical Expressions

What is the simplest form of $\frac{\sqrt[3]{189x^7}}{\sqrt[3]{7x^2}}$?

Another way to simplify a radical expression is to _____ the denominator. You rewrite the expression so that there are no radicals in any denominator and no denominator in any radical.

Example 5: Rationalizing the Denominator

What is the simplest form of $\frac{\sqrt{9y}}{\sqrt{2x}}$?