Chapter 0-1: Review

Exponents, Fractions, and Radicals

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EXPONENT LAWS

1. Product Rule
2. Quotient Rule
3. Power Rule

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1. Product Rule ⟶ add their exponents

$10^2 \cdot 10^4 =$ 10^6

$10 \cdot 10 \cdot 10 \cdot 10 \cdot 10 \cdot 10$

What do you notice about their bases?

$x^2y^3 \cdot x^3y^{-5} = x^5y^{-2} = \frac{x^5}{y^2}$

$x^m \cdot x^n = x^{m+n}$

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2. Quotient Rule ⟶ subtract their exponents

$\frac{x^7}{x^4} = \frac{x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x}{x \cdot x \cdot x \cdot x} = x^3$

* need common denom.

$\frac{x^6y^3z^3}{x^4y^3z^7} + \frac{x^2y}{xyz}$

$\frac{x^2y^9}{z^4} + \frac{x \cdot z^3}{z \cdot z^3} = \frac{x^2y^9}{z^4} + \frac{xz^3}{z^4}$

$= \frac{x^2y^9 + xz^3}{z^4}$

$\frac{x+4}{8}$ NOT $\frac{4x}{8} = \frac{x}{2}$

$\frac{x}{8} + \frac{4}{8} = \frac{x}{8} + \frac{1}{2}$

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3. Power Rule ⟶ multiply their exponents

$(y^3)^2 = y^6$

$(2x^2)^3 + (2x^3)^2$

$2^3x^6 + 2^2x^6$

$8x^6 + 4x^6 = 12x^6$

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RECAP!

$x^m \div x^n = x^?$ $\quad x^{m-n}$

$x^m \cdot x^n = x^?$ $\quad x^{m+n}$

$(x^m)^n = x^?$ $\quad x^{m \cdot n}$

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Fraction Review

1. Adding/Subtracting
2. Multiplying/Dividing
3. Fractions with Variables

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Adding/Subtracting Fractions

* need COMMON DENOMINATOR *

ex1 $\frac{2\cdot5}{3\cdot5}+\frac{4\cdot3}{5\cdot3}$ $\frac{10}{15}+\frac{12}{15}=\frac{22}{15}$

ex2 $\frac{x^2\cdot y}{y\cdot y}+\frac{4x}{y^2}$ $\frac{x^2y}{y^2}+\frac{4x}{y^2}=\frac{x^2y+4x}{y^2}$

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Multiplying Fractions

ex3 $\frac{3}{7} \cdot \frac{4}{5}$ $\frac{12}{35}$

ex4 $\frac{x^2y}{3x} \cdot \frac{x}{2} = \frac{x^2y \cdot x}{3x \cdot 2} = \frac{x^3 \cdot y}{6x} = \frac{x^2y}{6}$

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Dividing Fractions

ex5 $\frac{2}{5} \div \frac{3}{4} = \frac{2}{5} \cdot \frac{4}{3} = \frac{8}{15}$

* multiply by the reciprocal *

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Radicals

1. Adding/Subtracting
2. Multiplying/Dividing
3. Rationalizing

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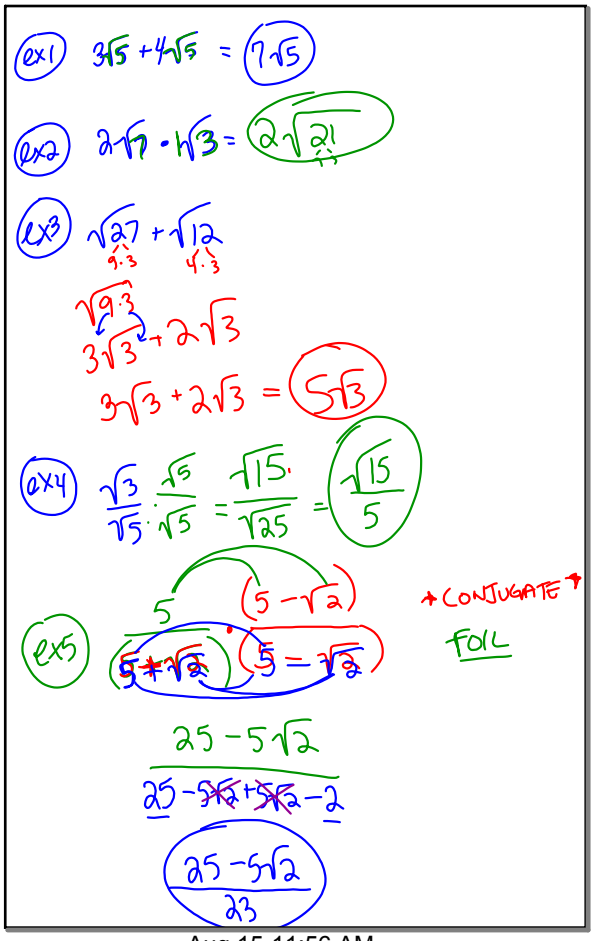

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HW: Review Worksheet!

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Simplifying Reminders

*You can cancel terms if top and bottom are connected by multiplication

*If there is a +/- sign you may need to factor first and then cancel

*You may need to split the fraction into two if there is ONE term in the denominator

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