Learning Target 7.2

I can demonstrate understanding of radical expressions and expressions with rational exponents.

Jan 21-8:57 AM

7.2 A Properties of Exponents

Product of Powers Property

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

Ex. $2^3 \cdot 2^2 = 2^{3+2} = 2^5 = 32$

1. $2^3 \cdot 2^2$ or $x^3 \cdot x^5$

Nov 24-8:03 AM

7.2 A Properties of Exponents

Power of a Power Property

$(a^m)^n = a^{m \cdot n}$

Ex. $(2^3)^2 = 2^{3 \cdot 2} = 2^6 = 64$

2. $(2^3)^2$ or $(x^5)^4$

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7.2 A Properties of Exponents

Power of a Product Property

$(a \cdot b)^m = a^m b^m$

Ex. $(2x)^3 = 2^3 x^3 = 8x^3$

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7.2 A Properties of Exponents

Quotient of Powers Property $\frac{a^m}{a^n} = a^{m-n}$

Ex. $\frac{x^{11}}{x^3} = x^{11-3} = x^8$

$\frac{x^{11}}{x^6} =$

Ex. $\frac{x^8}{x^3} =$

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7.2 A Properties of Exponents

Power of a Quotient:

$\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}, b \neq 0$

Ex. $\left(\frac{3}{x}\right)^2 = \frac{3^2}{x^2} = \frac{9}{x^2}$

$\left(\frac{y^5}{3}\right)^2 =$

$\left(\frac{xy^3}{z}\right)^3 =$

Jan 21-9:01 AM

7.2 Day 1 Exponent Rule Product and Power finished

7.2 A Properties of Exponents

Negative Exponents

$a^{-n} = \frac{1}{a^n}$ and $\frac{1}{a^{-n}} = a^n$

Ex. $x^{-3} = \frac{1}{x^3}$

$5^{-3} =$

$x^{-6} =$

$\frac{1}{10^{-1}} =$

$\frac{5}{x^{-2}} =$

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

Jan 21-9:01 AM

7.2 A Properties of Exponents

ex1 $(2ab^2)(-4a^3)$

$2 \cdot -4 \quad a^1 \quad a^3 \quad b^2$

a^{1+3}

$-8a^4 \cdot b^2$

Apr 25-9:36 AM

Write the following as exponents:

1. $2 \times 2 \times 2 =$___
2. $2 \times 2 \times 2 \times 2 \times 2 =$ ___
3. $x * x * x * x * x * x =$ ___
3. $(2 \times 2 \times 2) \times (2 \times 2 \times 2 \times 2) =$_____

Verify which equation below is right:

1. $2^3 * 2^4 = 4^7$
2. $2^3 * 2^4 = 2^7$
3. $2^3 * 2^4 = 4^{12}$

Is there a shortcut/rule to simplify an $x^a * x^b =$

Mar 25-12:34 PM

Simplify the following Expressions: (Remember 1/1 = 1)

1. $\frac{2*2*2*2}{2*2} =$ _____
2. $\frac{3*3*3*3*3}{3*3} =$_____
3. $\frac{x*x*x*x*x}{x*x*x} =$ _____

Expand the exponents and simplify each expression

1. $\frac{3^4}{3^2} =$ _____ = _____
2. $\frac{4^5}{4^4} =$_____=____
3. $\frac{x^6}{x^3} =$ _____=_____

Is there a shortcut/rule to simplify an $\frac{x^a}{x^b} =$

Mar 26-1:09 PM

Expand the problem and rewrite as an exponent:

1. $(7^2)^2 =$_____
2. $(7^2)^3 =$_____
3. $(5^4)^2 =$_____

Is there a shortcut/rule to simplify an $(x^a)^b =$

Mar 25-12:35 PM

$6x^2y^3 * xy$

$6x^3y^4$

Mar 25-12:34 PM

$(3x^2)^4$

$3x^2 \cdot 3x^2 \cdot 3x^2 \cdot 3x^2$

$81x^8$

$(3x^2)^4 \quad 3^4 x^8$

$3 \cdot 4 \quad x^{2 \cdot 4}$

$12x^8$

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$(6a^3b^2)^2$

$36a^9b^4$

$36a^6b^4$

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$(4x^4y^3)^2(-2x^3y^1)^3$

$(16x^8y^6)(-8x^9y^3)$

$-128x^{17}y^9$

$4^2x^8y^6(-2^3x^9y^3)$

$-8^5x^{17}y^9$

Mar 26-9:40 AM

7.2 A Properties of Exponents

$\left(\frac{4y^3}{4y^3}\right)^2 = \frac{4^{1 \cdot 2}y^{3 \cdot 2}}{4^{1 \cdot 2}y^{3 \cdot 2}}$

$\frac{4^2y^6}{4^2y^6} \quad \frac{16y^6}{16y^6}$

$1 \quad \frac{y^6}{y^6}$

y^{6-6}

$y^0 = 1$

Mar 26-1:17 PM

7.2 A Properties of Exponents

$(5x^{-1}y^3)(3x^3y^{-6})^3$

May 2-10:12 AM

$\left(\frac{12a^3b^4}{4a^{-2}b^6}\right)^2$

$\left(\frac{12a^3b^4}{4a^{-2}b^6}\right)^2 \quad \frac{12^{1 \cdot 2}a^{3 \cdot 2}b^{4 \cdot 2}}{4^{2 \cdot 2}a^{-2 \cdot 2}b^{6 \cdot 2}}$

$\frac{144a^6b^8}{16a^{-4}b^{12}}$

$\left(3a^5b^{-2}\right)^2$

$3^2a^{10}b^{-4}$

$9a^{10}b^{-4}$

$9a^{6-4}b^{8-12}$

$9a^{10}b^{-4}$

$\frac{9a^{10}}{b^4}$

May 3-8:49 AM