

Warm Up: Pre-Calc

9/17 Day 1

Exponent and Exponential Functions pre-assessment

Do your best! Sorry for all the tests, but I need to know what you know.

Feb 27-7:39 AM

Solutions to Warm Up: Pre-Calc

Feb 27-7:39 AM

**W.A.L.T.:**

Day 1

Remember the properties of exponents.

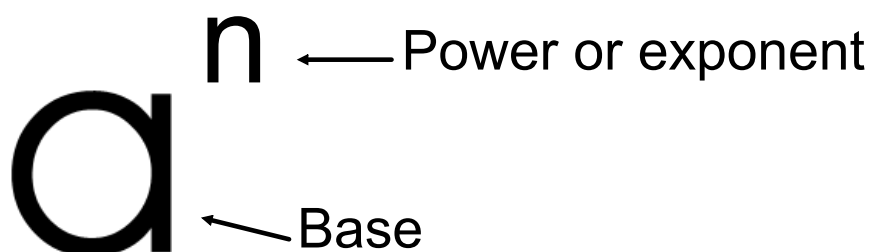
**W.A.S.I.:**

We can perform the operations of exponents.

Mar 7-9:45 AM

**Notes!!!** Exponents or Powers

An exponent is a number written as a base raised to a power.



The diagram shows a large lowercase letter 'd' representing the base. To its upper right is a lowercase letter 'n' representing the power or exponent. An arrow points from the text 'Power or exponent' to the 'n', and another arrow points from the text 'Base' to the 'd'.

Aug 20-9:38 AM

**Notes!!!** Multiplying Exponents

Write out the expanded form and count the number of times each one is being multiplied.

Ex 1:  $2^3 \cdot 2^4$

Ex 2:  $x^5 \cdot x^6$

What pattern do you notice? (hint: look at the exponents of the starting problem and the solution)

Aug 20-9:38 AM

**Notes!!!** Multiplying Exponents

What pattern do you notice? (hint: look at the exponents of the starting problem and the solution)

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

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**Notes!!!** Dividing Exponents

Write out the fraction in expanded form, cancel

Ex 1:  $\frac{2^5}{2^3}$

Ex 2:  $\frac{x^7}{x^3}$

Ex 3:  $\frac{(3 \times 3 \times 3)}{(3 \times 3 \times 3 \times 3 \times 3)}$

$x^4$        $\frac{1}{3^2}$

What pattern do you notice? (hint: look at the exponents of the starting problem and the solution)

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**Notes!!!** Dividing Exponents

What pattern do you notice? (hint: look at the exponents of the starting problem and the solution)

$$\frac{a^m}{a^n} = a^{m-n}$$

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**Notes!!!** Negative Exponents

Lets use an example problem to start talking about negative exponents.

Example:  $\frac{4^3}{4^8}$

$$\frac{x^{-4}}{y^{-4}}$$

$$= \frac{1}{4^5}$$

$$4^{3-8} = 4^{-5}$$

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**Notes!!!** Negative Exponents

Based on the example problem and the try these what conjecture (hypothesis) can you make about negative exponents?

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

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**Notes!!!** Zero Power

Based on the example problem and the try these what conjecture (hypothesis) can you make about anything to the zero power?

$$a^0 = 1$$

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**Notes!!!** Power of a Power

Write out the expanded form and use the multiplication of power property.

Ex 1:  $(2^4)^3$

$$2^4 \cdot 2^4 \cdot 2^4$$

$$2^{12}$$

Ex 2:  $(2x^2)^2$

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

$$2^2 x^2 \cdot x^2 = 2^2 x^4$$

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**In Class Work:**

Worksheet #1 - 24

Mar 7-1:33 PM

Today's Activities:

- Review of Properties of Exponents

P.W. for tonight:

- Worksheet: Exponent Properties

Day 1

Feb 27-7:23 AM