

welcome
- BACK -

Find your name and # on the class list next to the cell phone hanger, and put your cell phone in that pocket.
Then find your new seat from the seating chart.

Jan 4-2:14 PM

Warm Up - Write each problem.

Fill in each box with the correct number.

$$1) x^3 \cdot x^5 = x^8$$

$$4) (6x^{-3}y)^2 = 36x^{\boxed{6}}y^{\boxed{2}}$$

$$2) (-3x^2y^5)^3 = \boxed{-27}x^{\boxed{6}}y^{\boxed{15}}$$

$$x^{-3} \cdot x^{-3} = x^{-6}$$

$$5) (3xy)^0 = \boxed{1} \text{ or } 1$$

$$3) \frac{x^8}{x^5} = x^{\boxed{3}}$$

Jan 18-10:10 AM

Properties of Exponents

multiplication property

division property

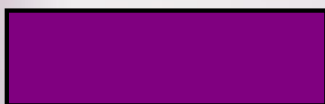
power raised to a power

negative exponents

Jun 30-8:41 PM

Multiplication Properties of Exponents

Product of Powers



1) $(3x^5)(4x^2) =$

$$12x^{5+2} = 12x^7$$

2) $x^5 \cdot x^{-8} =$

$$\frac{x^{-3}}{x^3}$$

Negative Power



3) $(5x^3)(-2x^{-7})$

$$-10x^{3-7} = -10x^{-4} = \frac{-10}{x^4}$$

4) $x^{-7} \cdot x^{-3} \cdot y^5 =$

$$\frac{x^{-10}y^5}{x^{10}}$$

Power raised to a Power



5) $(-2x^4y^5)^3$

$$-8x^{-12}y^{15} = \frac{-8y^{15}}{x^{12}}$$

6) $(-3x^5)^{-2}(x^6) =$

$$\frac{-3^{-2}x^{-10}x^6}{(-3)^2x^{10}} = \frac{1}{9x^4}$$

Jun 30-9:20 PM

Division of powers



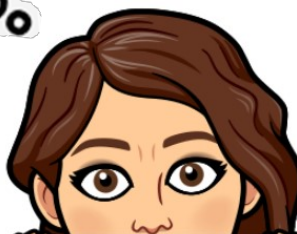
simplify -
no exponents

$$7) \frac{12x^7y^{-5}}{4x^{-2}y^{-8}} = \frac{12x^7x^2y^8}{4y^5} = 3x^9y^3$$

$$8) \frac{(4x^{-1}y^2z^0)^{-2}}{8^{-1}x^{-5}} = \frac{4^{-2}x^2y^{-4}z^0}{8^{-1}x^{-5}} = \frac{8x^2x^5}{16y^4} = \frac{x^7}{2y^4}$$

Jan 17-8:52 PM

Why does (anything)⁰ = 1?
Why do negative
exponents move to the
denominator?



Dec 22-11:48 AM

Let's check out this pattern!

$$\begin{aligned}
 3^3 &= 3 \cdot 3 \cdot 3 = 27 \\
 3^2 &= 3 \cdot 3 = 9 \\
 3^1 &= 3 = 3 \\
 3^0 &= 1 \\
 3^{-1} &= \frac{1}{3} \\
 3^{-2} &= \frac{1}{3^2} = \frac{1}{9}
 \end{aligned}$$

Red and blue arrows indicate division by 3 between consecutive powers.

What is happening every time the exponent decreases by 1?

Dec 22-11:55 AM

Laws of Exponents Wrap Up

Compare your answer with the person sitting next to you.

$4y^2a^{-5}z$	$\frac{-6m^4n^3}{3} = -2m^4n^3$	k^8
x^2y^{-3}	$-6m^43^{-1}n^3$	$h^{-1}g$
$d^{-5}en^7$		

negative exponents

Go Cougar Basketball!



Get out your chromebook to join 2nd semester google classroom. The homework link is on my website calendar.

HW - pg. 368 #2-24 even

Be sure to write the problem, show the work and the answer.

Dec 22-2:05 PM