2.4 Exponents Laws I

Wednesday, November 18, 2015 12:13

2.4 - Exponent Laws I

Name

Math 9

Notes

Warmup:

Complete the table and see if you can find a pattern:

Product of Powers	Product as Repeated Multiplication	Product as a Power
$5^4 \times 5^2$	(5x5x5x5) x (5x5)	56
$3^5 \times 3^4$	3x3x3x3x3x3x3x3x3x3	3 7
$2^3 \times 2^3$		26
$4^6 \times 4$		47

What is the Exponent Law for a Product of Powers?

To multiply powers with the same base, add the exponents. $\alpha \cdot \alpha' = \alpha^{x+y}$

Blk

Ex1

Write each expression

as a power:

a)
$$3^5 \times 3^2$$

What is $8^7 \div 8^4$? = $\frac{8^7}{8^4}$ = $\frac{8 \times 8 \times 8 \times 8 \times 8 \times 8 \times 8}{8 \times 8 \times 8 \times 8}$ = 8^3

What is the Exponent Law for a Quotient of Powers? To divide powers with the same, sustract the exponents. $a^{n} \cdot a^{n} = a^{m} = a^{m-n}$

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a)
$$4^8 \div 4^3$$

$$4 - 3 = 4$$

$$5 = 4$$

b)
$$\frac{(-5)^6}{(-5)^4}$$
 $(-5)^6$

c)
$$3^{2} \times 3^{4} \div 3^{3}$$

 3^{2+4}
 $3^{6} \div 3^{3}$
 $3^{2} \times 3^{4}$

d)
$$\frac{2^3}{2^3} = Z^{3-3}$$

$$= Z^{0}$$

$$= Z^{0}$$

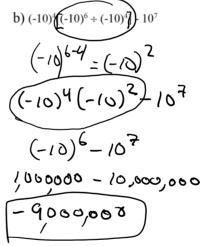
$$= 1$$

$$C^{0} = 1$$

$$C^{0} = 1$$

Ex3 – Evaluate: Order of operations and exponent laws

a)
$$(2^3)$$
x (3^2)
8 x 9
= 72



assignment 2.4 work sheet - Due Hunday

Reflection: When can you use the exponent laws to evaluate an expression with powers? When can you *not* use these laws? Include examples.