

Exponents and Multiplication

Who uses this?

Let's Explore:

EX #1:

$$2^3 \cdot 2^4 =$$

$$3^2 \cdot 3^3 =$$

$$5^5 \cdot 5 =$$

$$(-2)^2 \cdot (-2)^4 \cdot (-2)^3 =$$

Describe a rule for multiplying bases that are the same.

Practice: Write each as an expression using a single exponent.

A. $x^8 \cdot x^{13}$

B. $8^7 \cdot 8^{-2}$

C. $y^4 \cdot y^6 \cdot y$

Writing an Equivalent Expression.

Practice: Determine if each expression is equivalent to $x^5 \cdot x^8$. Show/Explain.

A. $x^{20} \cdot x^{20}$

C. $x^9 \cdot x^3 \cdot x$

A. $x^{10} \cdot x^3$

D. $x^{20} \cdot x^{-7}$

What happens when there are different bases? Or Coefficients?

EX #2:

$2x^3 \cdot 4x^5$

$-6x \cdot 3x^8$

EX #3

$-x^4 \cdot 2y^5 \cdot 3x^3$

$6x^{-2} \cdot 4y \cdot x^6$

Practice:

A. $2a^5 \cdot -5b^4 \cdot 3a^2$

B. $d^6 \cdot 2e \cdot 3d^{-1}$

C. $3x^{-3} \cdot 4x \cdot x^7$

Powers with Negative Bases

EX #1:

$(-2)^6 =$

$-3^4 =$

Practice:

A. -5^4

B. $(-6)^2$

C. -3^{-3}