Exponent Properties I

12/19/2017

Warm-Up: Write each product in expanded form then write using one exponent.

Ex: $3^2 \cdot 3^4 = 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 = \boxed{3^6}$

a. $2^3 \cdot 2^4$

b. $x^5 \cdot x^{12}$

c. $10^2 \cdot 10^5$

a. $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 = \boxed{2^7}$

b. $x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x$

$\boxed{x^{17}}$

c. $10 \cdot 10 \cdot 10 \cdot 10 \cdot 10 \cdot 10 \cdot 10 = \boxed{10^7}$

Generalize

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

Multiplication Property of Exponents

Write each problem in expanded form then rewrite with exponents but no parentheses.

Ex. $(x^5)^2 = x^5 \cdot x^5 = \boxed{x^{10}}$

1. $(y^2x^7)^2$

2. $(3x^7)^3$

1. $y^2x^7 \cdot y^2x^7 = \boxed{y^4x^{14}}$

2. $3x^7 \cdot 3x^7 \cdot 3x^7 = \boxed{27x^{21}}$

Generalize

$$(a^m)^n = a^{mn}$$

Power of a Power Property of Exponents