

WARM - UP
NOV. 9TH

Simplify by using the exponential properties

$$4^2 \bullet 4^{4 \cdot 3}$$

The Power Property

Turn & Talk

Property – The Power Property of Exponents

English: An expression written in exponential form which is itself raised to an exponent results in the base of the expression raised to the product of the exponents.

Example: $(3^4)^2 = 3^{4 \times 2} = 3^8$

p. 48

$$(3^4)^2 = 3^{4 \times 2} = 3^8$$

$$3^4 \times 3^4$$

$$3^{4+4}$$

$$3^8$$



Use **exponent properties** to write each expression as a single term, then simplify.

$$\begin{aligned} & (3^3)^2 \times 3^5 \\ & \begin{array}{l} \times \\ \text{power} \end{array} \rightarrow 3^{3 \cdot 2} \times 3^5 \\ & 3^6 \times 3^5 \\ & 3^{6+5} = \boxed{3^{11}} \end{aligned}$$

Use exponent properties to write each expression as a single term, then simplify.

$$\begin{aligned} & (2^7)^2 (2^3)^3 \\ \text{power prop} \rightarrow & (2^{7 \cdot 2}) (2^{3 \cdot 3}) \\ & 2^{14} \cdot 2^9 \\ \text{prod. prop.} \rightarrow & 2^{14+9} = \boxed{2^{23}} \end{aligned}$$

Use exponent properties to write each expression as a single term, then simplify.

$$(3^4 \times 3^5)^2$$

Assignment (due Tuesday)

p.48 (5 - 10)

p.47 (1-4)