

Get a white board, marker, and eraser to do the warm up!

$$1. (2x^2)^2 = 2^2 x^4$$
$$4x^4$$

$$2. (7.3t^7s^8r^3)^0 =$$
$$|$$

$$3. (4a^3b^2z)^2 =$$
$$4 \cdot 4 \rightarrow 4^2 a^6 b^4 z^2$$

$$16a^6b^4z^2$$

$$4. (9x^6y^{10}z^{12})^2 =$$
$$9^2 x^{12} y^{20} z^{24}$$

$$81x^{12}y^{20}z^{24}$$

Does Power Rule work with negative exponents?

$$1. (2x^2)^{-2} = 2^{-2} x^{-4} = \frac{1}{2^2 x^4} = \frac{1}{4x^4}$$

$$3. (4a^3b^2z)^{-2} =$$

$$4^{-2} a^{-6} b^{-4} z^{-2}$$

$$2. (7t^7s^8r^3)^{-1} =$$

$$7^{-1} t^{-7} s^{-8} r^{-3}$$

$$\frac{1}{7t^7s^8r^3}$$

$$4. (9x^6y^{10}z^{12})^{-2} =$$

$$\frac{1}{(6a^6b^4z^2)}$$

How does the power rule work with a fraction?

$$\left(\frac{2x^5}{4x^3}\right)^2 =$$

$$\left(\frac{2^2 x^{5 \cdot 2}}{4^2 x^{3 \cdot 2}}\right)^2 =$$

$$\frac{4x^{10}}{16x^6} = \frac{1x^4}{4} = \frac{x^4}{4}$$

## Your Turn!

$$\left(\frac{3a^4b^7}{4a^2b}\right)^2 = \frac{3^2 a^8 b^{14}}{4^2 a^4 b^2}$$

$$\frac{9a^4b^{12}}{16}$$

# Your Turn!

$$\left(\frac{a^2 b^3}{2a^3 b^2}\right)^2 = \frac{a^4 b^6}{4a^6 b^4}$$

$$\frac{1b^2}{4a^2}$$

# Your Turn!

$$\left(\frac{5s^{10}t^3w^3}{7s^4t^6w}\right)^2 =$$