

K+W+L

(Know...Want to know...Learned)

| | What I KNOW | What I WANT to know (What makes this confusing?) | What I LEARNED (and what rule) |
|--|--|--|---|
| $x^2 \bullet x^3$ | $\underbrace{x \cdot x}_2 \cdot \underbrace{x \cdot x \cdot x}_3 = x^5$ $x^{2+3} = \boxed{x^5}$ | | * when you have the same base and are multiplying, you ADD the exponents |
| $\underline{5}x^2 \bullet \underline{2}x^3$ | $\boxed{10x^5}$ | | |
| $(x^2)^3$ | $(x^2)(x^2)(x^2) = x^6$ $x^{2 \cdot 3} = \boxed{x^6}$ | | * when you raise a power to another power, you MULTIPLY the exponents |
| $\left(\frac{2x^{-2}y^5}{4x^3y^{-2}}\right)^0$ | $(\text{anything})^0 = \boxed{1}$ | | * any expression raised to the zero power equals 1 |
| x^{-5} | $\cancel{x^{-5}} \rightarrow \boxed{\frac{1}{x^5}}$ | | * neg exponents \rightarrow cross the line, change the sign |
| $x^{-5} \bullet x^5$ | $x^{-5+5} = x^0 = \boxed{1}$ | | |
| $\frac{1}{x^{-3}}$ | $\frac{1}{\cancel{x^{-3}}} = \frac{x^3}{1} = \boxed{x^3}$ | | |
| $(\underline{2}x^4)(\underline{3}x^3y^2)$ | $\boxed{6x^7y^2}$ | | |

| | What I <u>KNOW</u> | What I <u>WANT</u> to know (What makes this confusing?) | What I <u>LEARNED</u> (and what rule) |
|---------------------------------|---|--|---|
| $(2x)(5x^3)$ | $10x^4$ | | |
| $(x^2y^{-3}z^4)^{-1}$ | $x^{-2}y^3z^{-4} = \frac{y^3}{x^2z^4}$ | | * distribute the exponent to all the factors in the expression |
| $\frac{3x^3y^2z^5}{9x^2y^4z^4}$ | $\frac{1xz}{3y^2} = \frac{xz}{3y^2}$ | | * when you have the same base and are dividing, find out where there are more and how many more |
| $\frac{(2x^2)^3}{8x^5}$ | $\frac{2^3x^6}{8x^5} = \frac{8x^6}{8x^5} = x^1$ | | |
| $\frac{12x^2y^3}{4xy^5}$ | $\frac{3x}{1y^2} = \frac{3x}{y^2}$ | | |

$$\frac{x^6}{x^2} = \frac{\cancel{x} \cdot \cancel{x} \cdot \boxed{x \cdot x \cdot x \cdot x}}{\cancel{x} \cdot \cancel{x}} = x^4$$

$$\frac{x^2}{x^6} = x^{-4}$$