Product Rule for Exponents

Product Rule for Exponents

If *m* and *n* are integers and $a \neq 0$, then, $a^m \cdot a^n = a^{m+n}$

      i.e. When multiplying expressions with **like bases**, add the exponents to get the exponent of the common base. If the base is a number, remember NOT to multiply the base.

$$3^4 \cdot 3^2 = 3^{4+2} = 3^6 = 729 \qquad\qquad -2^2 y^2 (5y^4) = -20y^6$$

$x^4 \cdot y^2 = x^4 y^2$ Since the bases are different, the factors cannot be combined.

TRY: $4x^3(5x)$