

Rule 1) If the bases are the same and we are multiplying we add the exponents

$$\text{ex) } x^m \cdot x^n = x^{m+n}$$

Rule 2)

If we have the same base and we are dividing then we subtract the exponents

$$\text{ex) } \frac{x^m}{x^n} = x^{m-n}$$

Rule 3)

If you have a power raised to another power you multiply them

$$\text{ex) } (x^m)^n = x^{mn}$$

Rule 4

Any base raised to the zero power equals "1"

$$x^0 = 1$$

Rule 5

Any negative exponent
switches its place
from top to bottom or
bottom to top.

$$\text{ex) } x^{-m} = \frac{1}{x^m} \quad \text{or} \quad \frac{1}{x^{-m}} = x^m$$

Rule 6+7)

If you have an exponent
outside a "()" then
distribute the exponent
to all parts in the "()"

$$\text{ex) } (xy)^m = x^m y^m$$
$$\left(\frac{x}{y}\right)^m = \frac{x^m}{y^m}$$