

$$a^4 \cdot a^{12} = a^{4+12} \\ = a^{16}$$

For any number x and all integers m and n,
 $x^m \cdot x^n = x^{m+n}$

For all integers m and n and any nonzero number x,

$$\frac{x^m}{x^n} = x^{m-n}$$

$$\frac{b^{15}}{b^7} = b^{15-7} \\ = b^8$$

$$(k^5)^9 = k^{5 \cdot 9} \\ = k^{45}$$

For any number x and all integers m and n,
 $(x^m)^n = x^{m \cdot n}$

For any integer m and any real number x and y, $y \neq 0$,

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

$$\left(\frac{c}{d}\right)^5 = \frac{c^5}{d^5}$$

$$(-2xy)^3 = (-2)^3 \cdot x^3 \cdot y^3 \\ = -8x^3y^3$$

For all numbers x and y and any integer n

$$(xy)^n = x^n y^n$$

For any nonzero number x

and any integer n,

$$x^{-n} = \frac{1}{x^n} \quad \text{and} \quad \frac{1}{x^{-n}} = x^n$$

$$5^{-2} = \frac{1}{5^2} = \frac{1}{25}$$

$$\frac{1}{m^{-3}} = m^3$$

$$(-0.25)^0 = 1$$

For any nonzero number x,

$$x^0 = 1$$