



Exponents

You know that adding the same number can be written as a multiplication:

$$5 + 5 + 5 + 5 = 4 \times 5$$

What about multiplying the same number?

$$3 \times 3 \times 3 \times 3 \times 3$$

well, that can be written with an exponent:

$$3 \times 3 \times 3 \times 3 \times 3 = 3^5$$

three to the \downarrow power of five

where 3 is called the base
and 5 is the exponent or index or power.

$$\text{So } 2^3 = 2 \times 2 \times 2$$

$$15^4 = 15 \times 15 \times 15 \times 15$$

$$x^2 = x \times x$$

$$\boxed{-3^2 = -3 \times 3 \rightarrow -9}$$

$$\boxed{(-3)^2 = -3 \times -3 \rightarrow 9}$$