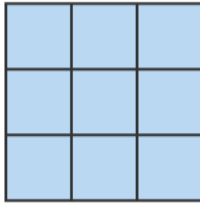


S2 Powers and Roots

Powers

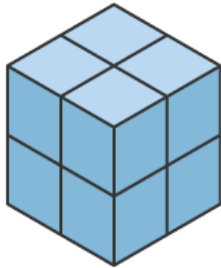
9 is a square number.



$$3 \times 3 = 9$$

3×3 can also be written as 3^2 . This is pronounced "3 squared".

8 is a cube number.



$$2 \times 2 \times 2 = 8$$

$2 \times 2 \times 2$ can also be written as 2^3 , which is pronounced "2 cubed".

Index form

The notation 3^2 and 2^3 is known as **index form**. The small digit is called the index number or **power**.

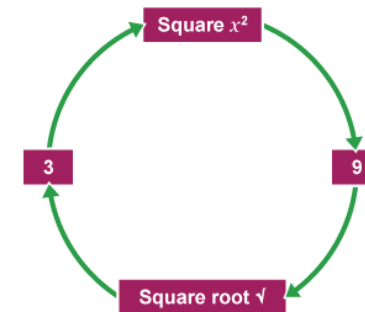
4^3	$4 \times 4 \times 4$	64
2^7	$2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$	128
7^2	7×7	49
5^3	$5 \times 5 \times 5$	125
2^4	$2 \times 2 \times 2 \times 2$	16
6^5	$6 \times 6 \times 6 \times 6 \times 6$	7,776

Square root and cube root

Square root

The opposite of squaring a number is called finding the **square root**.

The symbol for the square root is $\sqrt{\quad}$.



Example

The square root of 16 is 4 (because $4^2 = 4 \times 4 = 16$).

The square root of 25 is 5 (because $5^2 = 5 \times 5 = 25$).

The square root of 100 is 10 (because $10^2 = 10 \times 10 = 100$).