

INDEX NOTATION

A shorter way to write $8 \times 8 \times 8 \times 8$ is 8^4

We say “*8 to the power of 4*”

In 8^4 : 8 is called the **base number**
 4 is called the **index** or **exponent**.

The **basic numeral** is the result of the calculation which is 4096.

INDEX NOTATION

Expand and evaluate the following terms.

a 2^4

SOLUTION

a $2^4 = 2 \times 2 \times 2 \times 2$
 $= 16$

INDEX NOTATION

3^2 means 3×3 (we say “3 squared”)

3^3 means $3 \times 3 \times 3$ (we say “3 cubed”)

3^4 means $3 \times 3 \times 3 \times 3$ (“3 to the power of 4”)

3^5 means $3 \times 3 \times 3 \times 3 \times 3$ (“3 to the power of 5”)

etc

3^n means $3 \times 3 \times \dots \times 3$ (“3 to the power of n”)

n times

examples: $5^3 = 5 \times 5 \times 5$

$10^4 = 10 \times 10 \times 10 \times 10$

$(-2)^3 = (-2) \times (-2) \times (-2)$