Exponents

Exponents are also called "powers."

$10 \times 10 = 10^2$

10^2 = the second power of ten, or ten squared

$10 \times 10 \times 10 = 10^3$

10^3 = the third power of ten, or ten cubed

Show the eighth power of ten in four different ways.

Exponent form	Expanded form	Standard form	Word form
10^8	$10^8 = 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10$	100,000,000	one hundred million

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Examples:

A- Write in exponent form.

1) 1,000,000
10^6

2) 10,000
10^4

3) 100
10^2

B- Find the value.

4) 10^7
10,000,000

5) 10^5
100,000

6) 10^1
10

What number does 5^6 represent?

5 is the base. The 6 is called the exponent. The exponent tells you how many times the base is used as a factor.

$5^6 = 5 \times 5 \times 5 \times 5 \times 5 \times 5 = 15{,}625$

$3^4 = 3 \times 3 \times 3 \times 3 = 81$

3 is the base. The 4 is called the exponent.

Examples:

C- Write in exponent form.

7) 4 x 4 x 4 x 4
4^4

8) 7 x 7 x 7
7^3

9) 12 x 12 x 12 x 12 x 12 x 12
12^6

D- Find the value.

10) 9^4
9 x 9 x 9 x 9
6,561

11) 4^5
4 x 4 x 4 x 4 x4
1,024

12) 1^3
1 x 1 x 1
1

13) 14^2
14 x 14
196