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Let's talk about Exponents

Exponent

Base

$$2^4 = 2 \cdot 2 \cdot 2 \cdot 2 = 16$$

The **exponent** of a number says **how many times** to use the number in a multiplication.
In words: 2^4 can be read "2 to the power of 4" or "2 to the fourth power"

Exponents are also called Powers or Indices.

- Complete the table below, follow the example:

Number	Base	Exponent	Read as	Expanded Notation	Value
2^3	2	3	**Two cubed**	$2 \cdot 2 \cdot 2$	8
3^2			**Three squared**		
5^4					
$\square^{\square}$	6	2			
$\square^{\square}$			Seven squared		
$\square^{\square}$			Two to the power of six		
$\square^{\square}$	3	3			
$\square^{\square}$				$2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$	

LIVEWORKSHEETS

Laws of Exponents

Multiplication/Product:

Add the exponents $2^3 \cdot 2^5 = 2^{3+5} = 2^8$

Division/Quocient:

Subtract the exponents $3^8 : 3^2 = 3^{8-2} = 3^6$

Power:

Multiply the exponents $(7^6)^9 = 7^{6 \cdot 9} = 7^{54}$

What if the Exponent is 1, or 0?

1 If the exponent is 1, then you just have the number itself (example $\mathbf{9^1 = 9}$)

0 If the exponent is 0, then you get **1** (example $\mathbf{9^0 = 1}$).

➢ Let's practice, match every exponent with the correct expression:

a) $9^5 : 9^3$

b) $10^2 \cdot 10^4$

c) 0^{52}

d) 1^{75}

e) $(5^2)^6$

f) 7^1

g) $8^2 \cdot 8^5$

h) 10^3

- 1
- 8^7
- 5^{12}
- 7
- 1000
- 10^6
- 0
- 9^2

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