

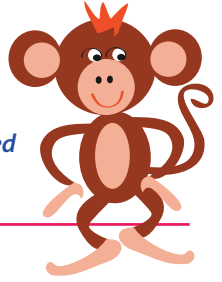
Multiplying with Exponents

An exponent is the simplest way to show how many times a number is multiplied by itself.

Example: $4 \times 4 \times 4 \times 4 \times 4$

The number 4 is multiplied by itself 5 times.

We can write 4^5 ← exponent Exponent is the number of times the base number is multiplied
4 ← base Base is the number



Multiplying numbers with exponents

Example: $4^5 \times 4^3$

We know that $4^5 = 4 \times 4 \times 4 \times 4 \times 4$

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

Therefore, $4^5 \times 4^3 = 4 \times 4 \times 4 \times 4 \times 4 \times 4 \times 4 \times 4 \times 4$

Or we can use this formula $A^m \times A^n = A^{(m+n)}$ where A represents a number if the bases are the same number.

Rewrite the expressions. See the example.

$$5^2 \times 5^3 = 5^{(2+3)} = 5^5$$

$$7^1 \times 7^1 =$$

$$3^4 \times 3^2 =$$

$$4^5 \times 4^2 =$$

$$6^5 \times 6^4 =$$

$$2^9 \times 2^8 =$$

Now, find the value of the expressions below. See the example.

$$2^{(2+3)} = 2 \times 2 \times 2 \times 2 \times 2 = 32$$

$$1^{(8+5)} =$$

$$3^{(1+4)} =$$