

# EXPONENT CHART 1 - 10

$$\begin{aligned}1^1 &= 1 \\1^2 &= 1 \\1^3 &= 1 \\1^4 &= 1 \\1^5 &= 1 \\1^6 &= 1 \\1^7 &= 1 \\1^8 &= 1 \\1^9 &= 1 \\1^{10} &= 1\end{aligned}$$

$$\begin{aligned}2^1 &= 2 \\2^2 &= 4 \\2^3 &= 8 \\2^4 &= 16 \\2^5 &= 32 \\2^6 &= 64 \\2^7 &= 128 \\2^8 &= 256 \\2^9 &= 512 \\2^{10} &= 1024\end{aligned}$$

$$\begin{aligned}3^1 &= 3 \\3^2 &= 9 \\3^3 &= 27 \\3^4 &= 81 \\3^5 &= 243 \\3^6 &= 729 \\3^7 &= 2187 \\3^8 &= 6561 \\3^9 &= 19683 \\3^{10} &= 59049\end{aligned}$$

$$\begin{aligned}4^1 &= 4 \\4^2 &= 16 \\4^3 &= 64 \\4^4 &= 256 \\4^5 &= 1024 \\4^6 &= 4096 \\4^7 &= 16384 \\4^8 &= 65536 \\4^9 &= 262144 \\4^{10} &= 1048576\end{aligned}$$

$$\begin{aligned}5^1 &= 5 \\5^2 &= 25 \\5^3 &= 125 \\5^4 &= 625 \\5^5 &= 3125 \\5^6 &= 15625 \\5^7 &= 78125 \\5^8 &= 390625 \\5^9 &= 1953125 \\5^{10} &= 9765625\end{aligned}$$

$$\begin{aligned}6^1 &= 6 \\6^2 &= 36 \\6^3 &= 216 \\6^4 &= 1296 \\6^5 &= 7776 \\6^6 &= 46656 \\6^7 &= 279936 \\6^8 &= 1679616 \\6^9 &= 10077696 \\6^{10} &= 60466176\end{aligned}$$

$$\begin{aligned}7^1 &= 7 \\7^2 &= 49 \\7^3 &= 343 \\7^4 &= 2401 \\7^5 &= 16807 \\7^6 &= 117649 \\7^7 &= 823543 \\7^8 &= 5764801 \\7^9 &= 40353607 \\7^{10} &= 282475249\end{aligned}$$

$$\begin{aligned}8^1 &= 8 \\8^2 &= 64 \\8^3 &= 512 \\8^4 &= 4096 \\8^5 &= 32768 \\8^6 &= 262144 \\8^7 &= 2097152 \\8^8 &= 16777216 \\8^9 &= 134217728 \\8^{10} &= 1073741824\end{aligned}$$

$$\begin{aligned}9^1 &= 9 \\9^2 &= 81 \\9^3 &= 729 \\9^4 &= 6561 \\9^5 &= 59049 \\9^6 &= 531441 \\9^7 &= 4782969 \\9^8 &= 43046721 \\9^9 &= 387420489 \\9^{10} &= 3486784401\end{aligned}$$

$$\begin{aligned}10^1 &= 10 \\10^2 &= 100 \\10^3 &= 1000 \\10^4 &= 10000 \\10^5 &= 100000 \\10^6 &= 1000000 \\10^7 &= 10000000 \\10^8 &= 100000000 \\10^9 &= 1000000000 \\10^{10} &= 10000000000\end{aligned}$$

# THE RULES OF EXPONENTS

## PRODUCT RULE

$$a^m \cdot a^n = a^{m+n}$$

## QUOTIENT RULE

$$\frac{a^m}{a^n} = a^{m-n}$$

## NEGATIVE RULE

$$a^{(-m)} = \frac{1}{a^m}$$

## POWER OF A POWER

$$(a^m)^n = a^{m \cdot n}$$

## POWER OF A PRODUCT

$$(ab)^m = a^m b^m$$

## POWER OF A QUOTIENT

$$\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$$

## ZERO RULE

$$a^0 = 1$$

## FRACTIONAL EXPONENTS

$$a^{\frac{m}{n}} = \sqrt[n]{a^m}$$