Have you ever wondered why the decimal system, the most widely-adopted number system, is done in base 10 but not 5 or 2? A possible reason for this is that when our ancestors first made sense of math, they were counting with the help of their ten fingers. From then on, numbers have been expressed in base 10. Since the decimal system is in base 10, it is coherent to represent large and small numbers in powers of 10. You know about one ten (10^1), one hundred (10^2), and one thousand (10^3) but some powers of 10 are given unique names to be identified universally. Read on to learn about them.

Myriad (10^4)

The term "myriad" came from Greek numerals and it is a word that represents ten thousand or 10 000. Many cultures used myriad to indicate groups of 10 000 in their counting systems. This method of grouping is still used in some countries. For example, in Chinese, "5 myriad" means 50 000 and "100 myriad" means 1 million. In modern English, however, myriad usually just means a very large number or an uncountable amount.

Lakh (10^5) and Crore (10^7)

In the Indian numbering system, a lakh equals one hundred thousand (or 100 000) and a crore equals ten million (or 10 000 000). So, it means that one crore equals 100 lakh. These two units are commonly used in terms of large sums of money in India and some countries close to India. For example, 500 000 rupees (Indian currency) would be referred to as "5 lakh rupees" and 80 000 000 rupees as "8 crore rupees".

SI Prefixes

The International System of Units (SI), a system of measurement for metric units, comprises base units including second (s) and metre (m). In this system, powers of 10 are designated by adding prefixes to the names of the base units. For example, "kilo-" denotes a multiple of a thousand (10^3), so when it is added to the base unit metre, it makes kilometre, which equals 1000 metres. Similarly, "milli-" denotes a multiple of a thousandth (10^{-3}), so millimetre equals 0.001 metre.

SI Prefixes

Prefix (Symbol)	Power of 10
nano (n)	10^{-9}
micro (μ)	10^{-6}
milli (m)	10^{-3}
centi (c)	10^{-2}
kilo (k)	10^3
mega (M)	10^6
giga (G)	10^9

Long Scale and Short Scale

The long and short scales are two systems of naming numbers in powers of 10. For powers of 10 that are smaller than 10^9 (e.g. one thousand), the names are the same under both scales. However, starting from 10^9, each name corresponds to different numbers. For example, 1 billion in the short scale is one thousand million but 1 billion in the long scale is one million million. So, we have to know the convention and culture of the people using these numbers in order to determine which scale they use.

Short Scale	Value	Long Scale
thousand	10^3	thousand
million	10^6	million
billion	10^9	milliard
trillion	10^{12}	billion
quadrillion	10^{15}	billiard
quintillion	10^{18}	trillion
sextillion	10^{21}	trilliard
septillion	10^{24}	quadrillion