

Extraction of The Square Root

Any number multiplied into itself produces a square
To extract the square root is only to find a number which being multiplied into itself shall produce the given numbers

Examples

What is the square root of 36372961

$$\begin{array}{r} 6031 \\ 36372961 \\ \underline{36000000} \\ 372961 \\ \underline{360000} \\ 12961 \\ \underline{120000} \\ 961 \\ \underline{9000} \\ 61 \end{array}$$

What is the square root of 4912

$$\begin{array}{r} 70 \\ 4912 \\ \underline{4900} \\ 12 \\ \underline{100} \\ 2 \\ \underline{20} \\ 0 \end{array}$$

To Extract The Square Root of Vulgar Fractions

Rule Reduce the fractions to its lowest terms for this shall be
Extract the root of the numerator for a new numerator & the root of the denominator for a new denominator
If the fractions be a surd reduce it to decimal & extract its root

Examples

What is the square root of $\frac{98}{162}$

$$\begin{array}{r} 98 \\ 162 \end{array}$$

What is the square root of $\frac{248}{16}$

$$\begin{array}{r} 248 \\ 16 \end{array}$$

What is the square root of $\frac{35}{126}$

$$\begin{array}{r} 35 \\ 126 \end{array}$$

What is the square root of $\frac{36}{4}$

$$\begin{array}{r} 36 \\ 4 \end{array}$$

Extraction of The Cube Root

A cube is any number multiplying by its square
To extract the cube root is to find a number which being multiplied into its square shall produce the given numbers

Examples

What is the cube root of 162771336

$$\begin{array}{r} 544 \\ 162771336 \\ \underline{544^3} \\ \dots \end{array}$$

What is the cube root of 729000000

$$\begin{array}{r} 900 \\ 729000000 \\ \underline{900^3} \\ \dots \end{array}$$

A General Rule For Extracting the Root of All Powers

Extract the square cube or 6th root of 12230590464

$$\begin{array}{r} 12230590464 \\ \dots \end{array}$$

$$\begin{array}{r} 755 \\ 48 \end{array}$$

$$\begin{array}{r} 110512 \\ 480 \end{array}$$