Definition of Surds.

Any root of a number which cannot be exactly found is called a surd.

Let *a* be a rational number and *n* is a positive integer. If the n^{th} root of *x i.e.,* $x^{1/n}$ is irrational, then it is called surd of order *n*.

Order of a surd is indicated by the number denoting the root.

For example $\sqrt{7}, \sqrt[3]{9}, (11)^{3/5}, \sqrt[n]{3}$ are surds of second, third, fifth and n^{th} order respectively.

A second order surd is often called a quadratic surd, a surd of third order is called a cubic surd.

Note: If *a* is not rational, $\sqrt[n]{a}$ is not a surd.