

What is a surd?



A **rational number** can be expressed as an exact fraction in the form $\frac{a}{b}$,
where a and b are **integers**

Reminder: An **integer** is a positive or negative whole number

Examples:

$$4 = \frac{4}{1}$$

$$0.5 = \frac{1}{2}$$

$$0.333\bar{3} = \frac{1}{3}$$

If a number cannot be written as a fraction it is **irrational**

Example: $\pi = 3.14\dots$ cannot be expressed as an exact fraction

An irrational root is called a **surd**

Examples: Surds

$$\sqrt{5}$$

$$\sqrt[5]{6}$$

Not surds

$$\sqrt{4} = 2$$

$$\sqrt[3]{8} = 2$$

Note: If a question asks for the exact value you must use the surd form, not a decimal approximation.

