

# Surds



**i. Write each of the following expressions as a single surd**

- $\sqrt{5} \times \sqrt{6}$
- $\sqrt{5} \div \sqrt{3}$
- $\sqrt{2} \times \sqrt{10}$
- $\frac{\sqrt{20}}{\sqrt{10}}$
- $\sqrt{4}\sqrt{5}$
- $\frac{\sqrt{100}}{\sqrt{25}}$
- $10\sqrt{45} - 5\sqrt{45}$

**ii. Rationalise the denominator of each of the following fractions**

- $\frac{2}{\sqrt{5}}$
- $\frac{3}{\sqrt{9}}$
- $\frac{2}{\sqrt{10}}$
- $\frac{4}{\sqrt{4}}$
- $\frac{2}{3 - \sqrt{5}}$

**iii. Write the following surds in the form  $a\sqrt{b}$**

- $\sqrt{200}$
- $\sqrt{20}$
- $\sqrt{98}$
- $\sqrt{12}$
- $\sqrt{48}$

**iv. Simplify the following expressions involving surds**

- $(5 + \sqrt{6})(5 - \sqrt{6})$
- $(3 + \sqrt{7})^2$
- $(1 + \sqrt{2})^2 - (1 - \sqrt{2})^2$
- $(1 + \sqrt{2})^2 - (2\sqrt{2} - \sqrt{2})^2$