

# Preparing for Integration

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**Format for integration**

$\sqrt[6]{x^5} = x^{-\frac{5}{6}} = \frac{1}{x^{\frac{5}{6}}}$

$\sqrt[7]{x^4} = x^{\frac{4}{7}}$

$\sqrt[3]{x} = x^{\frac{1}{3}}$

**Surds**

$\sqrt[n]{x^m} = x^{\frac{m}{n}}$

**Indices**

$x^m \cdot x^n = x^{(m+n)}$     $\frac{x^m}{x^n} = x^{(m-n)}$

$x^{\frac{1}{2}} \cdot x^{\frac{1}{4}} = x^{\frac{3}{4}}$

$\frac{x^{\frac{1}{3}}}{x^{\frac{2}{3}}} = x$

**Basics before Integration**

**Working with fractions**

**Adding**

$\frac{1}{2} + \frac{1}{3} = \frac{5}{6}$

**Subtracting**

$\frac{1}{2} - \frac{1}{3} = \frac{1}{6}$

**Multiplication**

$\frac{1}{2} \times \frac{3}{5} = \frac{3}{10}$

**Division**

$\frac{1}{2} \div \frac{4}{5} = \frac{5}{8}$