

Fractions

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Description

The word fraction is derived from the Latin word *fractio*, which means to break.

A fraction is the indicated quotient of two expressions.

$$\frac{a}{b} \quad \frac{5}{7} \quad \frac{5xy}{14z}$$

Arithmetic with fractions

- Equivalent fractions
- Comparing fractions
- Subtraction
- Addition
- Multiplication
- Division

$$\frac{5}{10} = \frac{1}{2} = \frac{10}{20}$$

$$\frac{3}{4} > \frac{2}{4}$$

$$\frac{4}{5} - \frac{2}{5} = \frac{2}{5}$$

$$\frac{1}{2} + \frac{3}{2} = \frac{4}{2} = 2$$

$$\frac{1}{4} \times \frac{3}{7} = \frac{3}{28}$$

$$\frac{1}{2} \div \frac{1}{4} = \frac{1}{2} \times \frac{4}{1} = 2$$

Forms of fractions

- Common or simple or vulgar fractions. $\frac{1}{2}, \frac{3}{4}, \frac{a}{b}$
- Complex fraction. $\frac{\frac{1}{2}}{\frac{3}{4}}$
- Proper fraction. $\frac{3}{4}, \frac{7}{9}$
- Improper fraction. $\frac{9}{2}, \frac{8}{6}$
- Mixed fraction.

$$2 + \frac{3}{4} = 2\frac{3}{4}$$

Reducible and Irreducible fractions

- Any reducible fraction such as $\frac{4}{6}$ in which the numerator and denominator have a common factor greater than the unity.
- Any irreducible fraction is a common fraction such as $\frac{2}{7}$ in which the numerator and denominator are relatively primes.

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