



11+ Fractions Revision

*Simplifying • Equivalent Fractions • Fraction of Amount •
Mixed & Improper Fractions • Operations*

**Suitable for GL, Independent Schools, and
Grammar School Preparation**

Simplifying fractions

Method (step by step):

1. Find the highest common factor (HCF) of the numerator and denominator.
2. Divide both numerator and denominator by the HCF.
3. Write the **simplified fraction**.

Example: Simplify $\frac{18}{24}$

- Factors of 18: 1, 2, 3, 6, 9, 18
- Factors of 24: 1, 2, 3, 4, 6, 8, 12, 24
- HCF = 6
- $18 \div 6 = 3$, $24 \div 6 = 4$

Answer: $\frac{3}{4}$

Equivalent fractions

Method (step by step):

1. To make an equivalent fraction, **multiply or divide** the numerator and denominator by the **same number**.
2. The **value stays the same**, only the form changes.

Example: Make an equivalent fraction to $\frac{3}{5}$

- Multiply top and bottom by 2
- $\frac{3 \times 2}{5 \times 2} = \frac{6}{10}$
- **Answer:** $\frac{6}{10}$ is equivalent to $\frac{3}{5}$

Fraction of an amount

Method (step by step):

1. **Divide** the whole amount by the **denominator**.
2. **Multiply** the result by the **numerator**.

Example: Find $\frac{3}{8}$ of 64

- Step 1: $64 \div 8 = 8$
- Step 2: $8 \times 3 = 24$
- **Answer:** 24

Mixed numbers → improper fractions

Method (step by step):

1. **Multiply** the whole number by the denominator.
2. **Add** the numerator.
3. Put the result **over the same denominator**.

Example: Convert $2\frac{1}{3}$ to an improper fraction

- Whole number = 2, numerator = 1, denominator = 3
- Step 1: $2 \times 3 = 6$
- Step 2: $6 + 1 = 7$
- Step 3: Put over 3 → $\frac{7}{3}$
- **Answer:** $\frac{7}{3}$

Improper fractions → mixed numbers

Method (step by step):

1. **Divide** the numerator by the denominator.
2. The **quotient** is the whole number.
3. The **remainder** is the new numerator.

Example: Convert $\frac{11}{4}$ to a mixed number

- Step 1: $11 \div 4 = 2$ remainder 3
- Step 2: Whole number = 2
- Step 3: Fraction part = $\frac{3}{4}$
- **Answer:** $2\frac{3}{4}$

Adding fractions (same & different denominators)

Method (different denominators):

1. **Find a common denominator.**
2. **Convert** each fraction to that denominator.
3. **Add** the numerators.

Example: $\frac{3}{8} + \frac{1}{4}$

- Common denominator of 8 and 4 is 8
- $\frac{1}{4} = \frac{2}{8}$
- Now: $\frac{3}{8} + \frac{2}{8} = \frac{5}{8}$

Practice questions (5)

1. Simplify $\frac{21}{28}$
2. Write an equivalent fraction to $\frac{5}{9}$
3. Find $\frac{4}{5}$ of 75
4. Convert $3\frac{2}{3}$ to an improper fraction
5. Add $\frac{2}{3} + \frac{1}{6}$

Answers

1. $\frac{21}{28} = \frac{3}{4}$
2. e.g. $\frac{10}{18}$ (any correct equivalent fraction)
3. $75 \div 5 = 15$, $15 \times 4 = 60 \rightarrow \mathbf{60}$
4. $3 \times 3 = 9$, $9 + 2 = 11 \rightarrow \frac{11}{3}$
5. Common denominator 6:
 - $23 = 46$
 - $\frac{4}{6} + \frac{1}{6} = \frac{5}{6} \rightarrow \frac{5}{6}$