

Learn Fractions

Eight essential skills - short explanations, visual examples and simple rules.

1. Understanding Fractions

A fraction shows part of a whole. The whole must be divided into equal parts.

Numerator (3): number of parts selected. Denominator (4): number of equal parts in one whole.

A proper fraction has a smaller numerator than denominator. An improper fraction has a numerator greater than or equal to its denominator.



3 shaded parts out of 4 equal parts

$$\frac{3}{4}$$

REMEMBER

The denominator tells us how many equal parts make one whole.

2. Equivalent Fractions

Equivalent fractions look different but have the same value.

Example: To change fifths into tenths, multiply the numerator and denominator by 2.



One-half



Two-quarters

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

$$\frac{3}{5} = \frac{6}{10}$$

REMEMBER

Multiply or divide the numerator and denominator by the same non-zero number.

3. Simplifying Fractions

Simplifying means writing a fraction using the smallest possible whole numbers.

Example: Simplify twelve-eighteenths. Divide both numbers by 6.

$$\frac{12}{18} = \frac{2}{3}$$

REMEMBER

Divide the numerator and denominator by the same common factor.

4. Finding a Fraction of an Amount

Divide the amount by the denominator, then multiply by the numerator.

Example: Find three-quarters of 20. $20 \div 4 = 5$; $5 \times 3 = 15$.

$$\frac{3}{4} \times 20 = 15$$

REMEMBER

Divide by the denominator, then multiply by the numerator.

5. Adding and Subtracting Fractions

Fractions must have the same denominator before you add or subtract them.

Example: Add one-third and one-sixth. Change one-third into two-sixths, then simplify.

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

REMEMBER

Make denominators the same. Add or subtract the numerators, not the denominators.

6. Multiplying a Fraction by a Whole Number

Multiply the numerator by the whole number. Keep the denominator the same.

Example: Multiply two-fifths by 3.

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

REMEMBER

Multiply the numerator by the whole number, then simplify if needed.

7. Dividing a Fraction by a Whole Number

Dividing a fraction into equal groups makes each share smaller.

Example: Divide three-quarters by 2. Three-quarters is six-eighths; share six shaded eighths between two groups.



$$\frac{3}{4} \div 2 = \frac{3}{8}$$

REMEMBER

Dividing a positive fraction by a whole number greater than 1 gives a smaller answer.

8. Comparing and Ordering Fractions

Use equivalent fractions with a common denominator to compare their values.

Example: Which is greater, two-thirds or three-fifths? The lowest common denominator is 15.

$$\frac{2}{3} = \frac{10}{15} \quad \frac{3}{5} = \frac{9}{15}$$

$$\frac{2}{3} > \frac{3}{5}$$

REMEMBER

A common denominator makes fractions easier to compare and order.