Basic Arithmetic

Fractions & Decimals.

Fraction represent a part of a whole and are written as $\frac{a}{b}$

where :-
a is the numerator (number of parts)
b is the denominator (total parts)

Decimals are another way to represents fractions
$\frac{1}{2} = 0.5$, $\frac{3}{4} = 0.75$

Key Operations

1. Addition / Subtraction of fractions :-
Make a denominators equal before adding / subtracting.

$$\frac{a}{b} + \frac{c}{d} = \frac{ad + bc}{bd}$$

$$\frac{a}{b} - \frac{c}{d} = \frac{ad - bc}{bd}.$$

2. Multiplication of fractions.

$$\frac{a}{b} \times \frac{c}{d} = \frac{ac}{bd}$$

3. Division of fraction

$$\frac{a}{b} \div \frac{c}{d} = \frac{a}{b} \times \frac{d}{c}$$

Problem 1 :-

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

$$= \frac{2\times6 + 5\times3}{3\times6}$$

$$= \frac{12 + 15}{18}$$

$$= \frac{27}{18} = \frac{3}{2}$$

$$\frac{7}{9} - \frac{5}{6}$$

$$= \frac{7\times6 - 9\times5}{63}$$

$$= \frac{42 - 45}{63}$$

$$= \frac{2}{63}.$$

Problem 2 :-

$$\frac{3}{4} \times \frac{2}{5}$$

$$= \frac{6}{20}$$

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

$$\frac{17}{19} \times \frac{24}{10}$$

$$\frac{408}{190}$$

$$= \frac{204}{95}$$