

Unit 9 Fraction Calculations

Introduction

Learning objectives

This unit aims to give participants an understanding of

- addition and subtraction of fractions
- multiplication of fractions
- division of fractions.

Facts to remember

Addition / subtraction

If denominators are equal, just add or subtract the numerators

For example $\frac{3}{8} + \frac{2}{8} = \frac{3+2}{8} = \frac{5}{8}$

$$\frac{3}{8} - \frac{2}{8} = \frac{3-2}{8} = \frac{1}{8}$$

With non-equal denominators, they have to be made equal.

For example $\frac{1}{4} + \frac{2}{5} = \frac{1 \times 5}{4 \times 5} + \frac{2 \times 4}{5 \times 4}$

$$= \frac{5}{20} + \frac{8}{20}$$

$$= \frac{13}{20}$$

Multiplying fractions The rule is $\frac{a}{b} \times \frac{c}{d} = \frac{a \times c}{b \times d}$ where a, b, c, d are whole (non-zero) numbers, that is, multiply the numerators and multiply the denominators.

For example $\frac{3}{5} \times \frac{7}{12} = \frac{21}{60} = \frac{7}{20}$

Dividing fractions The rule is $\frac{a}{b} \div \frac{c}{d} = \frac{a}{b} \times \frac{d}{c}$ where a, b, c, d are whole (non-zero) numbers.

For example $\frac{3}{5} \div \frac{7}{12} = \frac{3}{5} \times \frac{12}{7} = \frac{36}{35} = 1\frac{1}{35}$