IGCSE MATHEMATICS • EXERCISE SHEET

E1.4 Fractions, decimals and percentages

Name: _____ Class: _____ Date: _____ **Total: 11 marks**

KEY WORDS percentage 百分比 • simplest form 最简形式 • mixed number 带分数 • recurring decimal 循环小数 • fraction 分数

Objective

Build the skills to answer Extended exam questions on **fractions, decimals and percentages** 分数、小数和百分比 — converting between them, calculating with fractions, and **recurring decimals** 循环小数 (Extended).

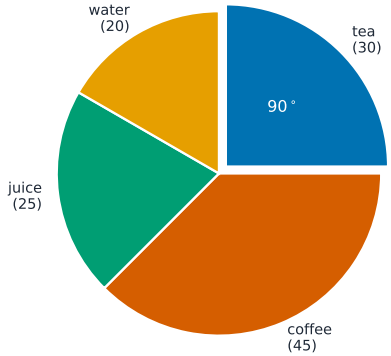
You must be able to:

- convert between fractions, decimals and percentages
- add, subtract, multiply and divide fractions
- write a recurring decimal as a fraction

1 Worked examples

Working with fractions

A percentage means "out of 100"



A pie chart shows fractions and percentages of a whole

- **Convert:** $\frac{3}{8} = 0.375$; $0.07 = 7\%$; $34\% = \frac{34}{100} = 0.34$.
- **Divide fractions:** multiply by the reciprocal — $\frac{2}{3} \div \frac{4}{5} = \frac{2}{3} \times \frac{5}{4} = \frac{10}{12} = \frac{5}{6}$.
- **Recurring → fraction (Extended):** for $0.1\dot{7}$, $100x = 17.7\ldots$, $10x = 1.7\ldots \rightarrow 90x = 16 \rightarrow x = \frac{16}{90} = \frac{8}{45}$.

Answer shapes: **M1** a correct method, **A1** the correct answer.

2 Practice

2.1 Work out $\frac{3}{4} \times \frac{2}{9}$, giving your answer in its simplest form. [2]

2.2 Write $\frac{5}{8}$ as a decimal. [1]

2.3 Work out $\frac{5}{6} - \frac{1}{4}$, giving your answer in its simplest form. [2]

3 Exam-style questions

3.1 Work out $2\frac{1}{3} \div \frac{7}{9}$, giving your answer as a mixed number. [3]

3.2 A rope of length $\frac{7}{8}$ m is cut into pieces each $\frac{7}{40}$ m long. Work out how many pieces are cut, showing your working as a division of fractions. [3]