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Percentages

Solutions & Answer Key

Full worked solutions, marking scheme & answer key

IGCSE Mathematics

The Panda Math Tutor

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Companion to the *Student Worksheet*

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Note

About this booklet. These are the complete solutions to every question in the *Percentages — Student Worksheet*. Question numbers match exactly: conversions C1–C8, percentage of a quantity P1–P7, one quantity as a percentage of another E1–E6, multipliers M1–M7, percentage change G1–G7, reverse percentages R1–R6, profit and loss L1–L4, successive changes S1–S4, algebra A1–A3, the Mixed Review MR1–MR10, and the examination questions Q1–Q8.
Each solution names the rule or formula being used and shows the multiplier where one applies. Part V collects the common mistakes to watch for, and Part VI is a quick answer key for fast marking.

4 Part IV — Complete Solutions

Note

Each solution names the rule or formula being used and shows the multiplier where one applies, exactly as the notes recommend. Depth is scaled to difficulty — brief for basic questions, fuller for the harder ones.

4.1 Solutions — Converting Fractions, Decimals and Percentages

Solution C1

Fraction → percentage: divide, then multiply by 100.

$$\frac{9}{25} = 9 \div 25 = 0.36, \qquad 0.36 \times 100 = \boxed{36\%}.$$

Solution C2

Percentage → fraction: write over 100 and simplify.

$$45\% = \frac{45}{100} = \boxed{\frac{9}{20}} \quad \text{(dividing top and bottom by 5).}$$

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Solution C3

Decimal → percentage: multiply by 100 (move the point two places right).

$$0.074 \times 100 = \boxed{7.4\%}.$$

Solution C4

Percentage → decimal: divide by 100 (move the point two places left).

$$240 \div 100 = \boxed{2.4}.$$

A value above 100% gives a decimal greater than 1.

Solution C5

(a) $3 \div 8 = \boxed{0.375}$. **(b)** $0.375 \times 100 = \boxed{37.5\%}$.

Solution C6

(a) $6.5 \div 100 = \boxed{0.065}$.

(b) $6.5\% = \dfrac{6.5}{100} = \dfrac{65}{1000} = \boxed{\dfrac{13}{200}}$ (multiply top and bottom by 10 to clear the decimal, then divide by 5).

Solution C7

Convert everything to percentages so they can be compared:

$$0.36 = 36\%, \qquad \frac{3}{8} = 0.375 = 37.5\%, \qquad 35\% = 35\%.$$

Ascending order: $35\% < 36\% < 37.5\%$, so

$$\boxed{35\%, \quad 0.36, \quad \frac{3}{8}}.$$

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Preview ends here

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