

WA7MNAC1

Calculating with number

Core + Challenge

Converting Fractions to Decimals and Percentages — Marking Key

I can convert fractions and mixed numbers to decimals and percentages using efficient strategies.

For tutors and parents. Award method marks for correct working even if the final answer is wrong.

Marks summary

Section A Fluency: 16 Section B Core: 23 Section C Reasoning: 9 Section D Challenge: 9 **Total: 57**

Fluency: 1 mark each; accept an equivalent unsimplified answer for half credit at tutor's discretion.

A

Fluency *answers and working*

/ 16 marks

Q	Answer	Working
1	0.6	$\frac{3}{5} = \frac{6}{10} = 0.6$
2	0.35	$\frac{7}{20} = \frac{35}{100} = 0.35$
3	0.375	$\frac{3}{8} = \frac{375}{1000} = 0.375$
4	0.36	$\frac{9}{25} = \frac{36}{100} = 0.36$
5	0.625	$\frac{5}{8} = \frac{625}{1000} = 0.625$
6	1.25	$1\frac{1}{4} = \frac{125}{100} = 1.25$
7	0.425	$\frac{17}{40} = \frac{425}{1000} = 0.425$
8	2.6	$2\frac{3}{5} = \frac{26}{10} = 2.6$
9	75%	$\frac{3}{4} \times 100\% = 75\%$
10	45%	$\frac{9}{20} \times 100\% = 45\%$
11	12.5%	$\frac{1}{8} \times 100\% = 12.5\%$
12	52%	$\frac{13}{25} \times 100\% = 52\%$
13	87.5%	$\frac{7}{8} \times 100\% = 87.5\%$
14	160%	$1\frac{3}{5} \times 100\% = 160\%$
15	7.5%	$\frac{3}{40} \times 100\% = 7.5\%$
16	68.75%	$\frac{11}{16} \times 100\% = 68.75\%$

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B

Core answers, working and marks

/ 23 marks

Q	Answer	Working / sample response	Marks
1	84% and 85% – the test	$\frac{21}{25} = \frac{84}{100} = 84\%$; $\frac{34}{40} = \frac{85}{100} = 85\%$ 1 mark: both percentages 1 mark: test	2
2	65%	$\frac{13}{20} = \frac{65}{100}$ 1 mark: working 1 mark: 65%	2
3	0.6, $\frac{5}{8}$, 63%, $\frac{13}{20}$	As percentages: 62.5%, 60%, 63%, 65% 1 mark: $\frac{5}{8} = 62.5\%$ 1 mark: $\frac{13}{20} = 65\%$ 1 mark: order	3
4	(a) 37.5% (b) 31.25%	$\frac{3}{8} = 37.5\%$ $100\% - 37.5\% = 62.5\%$; $62.5\% \div 2 = 31.25\%$ 1 mark: 37.5% 1 mark: 62.5% remaining 1 mark: 31.25%	3
5	0.583; 58.3%	$7 \div 12 = 0.58333\dots$ 1 mark each	2
6	(a) 16.7% (b) 80	$1 \div 6 = 0.1666\dots \rightarrow 16.7\%$ $\frac{1}{6} \times 480 = 80$ 1 mark: 16.7% 1 mark: correct rounding 1 mark: 80	3
7	New Zealand (70% vs 68.75%)	$\frac{11}{16} = 0.6875 = 68.75\%$; $\frac{7}{10} = 70\%$ 1 mark: both percentages 1 mark: NZ	2
8	55%	$2\frac{3}{4} \div 5 = \frac{11}{20} = 55\%$ 1 mark: $\frac{11}{20}$ 1 mark: 55%	2
9	$\frac{2}{3}$	$\frac{2}{3} = 66\frac{2}{3}\% > 66\%$ 1 mark: conversion 1 mark: $\frac{2}{3}$	2
10	56.25%	$9 \div 16 = 0.5625 = 56.25\%$ 1 mark: 0.5625 1 mark: 56.25%	2

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C

Reasoning *sample answers and marking criteria*

/ 9 marks

Q	Answer	Working / sample response	Marks
1	15%	$20 \times 5 = 100$, so $\frac{3}{20} = \frac{15}{100} = 15\%$. (Or $\frac{1}{20} = 5\%$, so $3 \times 5\% = 15\%$.) <i>1 mark: strategy</i> <i>1 mark: 15%</i>	2
2	0.125	$0.8 = \frac{8}{10} = \frac{4}{5}$, not $\frac{1}{8}$. $1 \div 8 = 0.125$. <i>1 mark: explains</i> <i>1 mark: 0.125</i>	2
3	16 divides into 10 000; 11 never divides a power of 10	$16 \times 625 = 10\,000$, so $\frac{3}{16} = \frac{1875}{10000} = 0.1875$. 11 is not a factor of 10, 100, 1000, ..., so the division never ends ($\frac{3}{11} = 0.272727\dots$). <i>1 mark: $\frac{3}{16} = 0.1875$</i> <i>1 mark: link to powers of 10</i> <i>1 mark: why 11 fails</i>	3
4	87.5%	$\frac{1}{8} = 12.5\%$, so $\frac{7}{8} = 7 \times 12.5\% = 87.5\%$ (or $100\% - 12.5\%$). <i>1 mark: uses $\frac{1}{8} = 12.5\%$</i> <i>1 mark: 87.5%</i>	2

D

Challenge *solutions and marking criteria*

/ 9 marks

Q	Answer	Working / sample response	Marks
1	$\frac{13}{40}$ (32.5%)	$30\% = \frac{12}{40}$; $35\% = \frac{14}{40}$ <i>1 mark: converts</i> <i>1 mark: $\frac{13}{40}$</i>	2
2	$\frac{3}{80}$	$\frac{375}{10000} = \frac{3}{80}$ ($\div 125$) <i>1 mark: $\frac{375}{10000}$</i> <i>1 mark: $\frac{3}{80}$</i>	2
3	$\frac{36}{80}$	$45\% = \frac{9}{20}$; $9 + 20 = 29$; $116 \div 29 = 4$, so $\frac{36}{80}$ <i>1 mark: $\frac{9}{20}$</i> <i>1 mark: $\frac{36}{80}$</i>	2
4	$55\% = \frac{11}{20}$, $\frac{5}{9}$, 0.56	$\frac{11}{20} = 55\%$; $\frac{5}{9} = 0.555\dots \approx 55.6\%$; $0.56 = 56\%$ <i>1 mark: $\frac{11}{20} = 55\%$</i> <i>1 mark: $\frac{5}{9} \approx 0.556$</i> <i>1 mark: order</i>	3