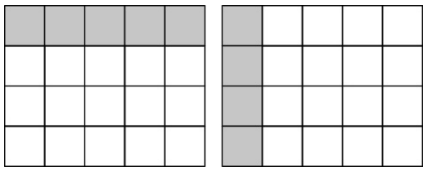
Oxford Revise | Edexcel GCSE Maths Foundation | Answers

Chapter 4 Fractions, decimals, percentages

Question	Answer	Extra information	Marks
4.1	$\frac{1}{4} > \frac{1}{5}$ To see why, convert both fractions to ones with a common denominator: $\frac{1}{4} = \frac{5}{20}$ and $\frac{1}{5} = \frac{4}{20}$ Alternatively, you can say that $\frac{1}{4}$ must be larger because when one whole is split into four parts, each part is larger than if the whole is split into five parts. You can show this by shading $\frac{1}{4}$ horizontally and $\frac{1}{5}$ vertically in this diagram: 	Correct answer accompanied by any correct explanation	1

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4.2	Write the fractions over a common denominator of 24: $\frac{3}{4}=\frac{18}{24};\ \frac{2}{3}=\frac{16}{24};\ \frac{5}{8}=\frac{15}{24};\ \frac{7}{12}=\frac{14}{24}$ They can now be put in order, starting with the smallest, by comparing the numerators: $\frac{7}{12},\frac{5}{8},\frac{2}{3},\frac{3}{4}$	Three out of four correct All correct	1 1
4.3 (a)(i)	$1\frac{2}{5}=\frac{7}{5}$	Correct answer	1
4.3 (a)(ii)	$3\frac{3}{4}=\frac{15}{4}$	Correct answer	1
4.3 (b)(i)	$\frac{17}{9}=1\frac{8}{9}$	Correct answer	1
4.3 (b)(ii)	$\frac{92}{40}=\frac{23}{10}=2\frac{3}{10}$ Alternatively: $\frac{92}{40}=2\frac{12}{40}=2\frac{3}{10}$	Simplify $\frac{92}{40}$ or $\frac{12}{40}$ Correct answer	1 1

Question	Answer	Extra information	Marks
4.4	Rhodri has $2\frac{1}{3}=\frac{7}{3}=\frac{56}{24}$ bottles Lizzie has $\frac{19}{8}=\frac{57}{24}$ bottles $57>56$, so Lizzie has more cola. Alternatively, Lizzie has $\frac{19}{8}=2\frac{3}{8}=2\frac{9}{24}$ bottles and Rhodri has $2\frac{1}{3}=2\frac{8}{24}$ bottles. $9>8$, so again, Lizzie has more.	Comparing $2\frac{1}{3}$ to an improper fraction or converting $\frac{19}{8}$ to a mixed number. Rewriting using a common denominator (eg 24) Correct comparison and conclusion	1 1 1
4.5	4		1
4.6 (a)	$\frac{1}{3}\times\frac{2}{5}=\frac{2}{15}$		1
4.6 (b)	$\frac{3}{7}\times\frac{14}{9}=\frac{\cancel{3}^{1}\times\cancel{14}^{2}}{7\times\cancel{9}^{3}}=\frac{1\times2}{1\times3}=\frac{2}{3}$	Multiplying Correct answer	1 1
4.7 (a)	$\frac{3}{4}\div\frac{1}{11}=\frac{3}{4}\times\frac{11}{1}=\frac{33}{4}\left(=8\frac{1}{4}\right)$	Rewriting as a multiplication Correct answer as improper fraction (or mixed number)	1 1
4.7 (b)	$\frac{6}{5}\div\frac{7}{10}=\frac{6}{\cancel{5}^{1}}\times\frac{\cancel{10}^{2}}{7}=\frac{6\times2}{1\times7}=\frac{12}{7}\left(=1\frac{5}{7}\right)$	Rewriting as a multiplication Correct answer as improper fraction (or mixed number)	1 1

Question	Answer	Extra information	Marks
4.8	$16 \div \frac{2}{3} = \frac{16}{1} \times \frac{3}{2} = \frac{48}{2} = 24$ days	Rewriting as a multiplication Correct answer	1 1
4.9	$30 \times \frac{1}{9} = \frac{30}{9} = \frac{10}{3}$ m or $3\frac{1}{3}$ m	Multiplying Correct answer as improper fraction (or mixed number)	1 1
4.10	$\frac{3}{10} \times \frac{1}{4} = \frac{3}{40}$	Multiplying Correct answer	1 1
4.11	Area of triangle $= \frac{1}{2} \times 1\frac{1}{5} \times \frac{6}{5} = \frac{1}{2} \times \frac{6}{5} \times \frac{6}{5} = \frac{36}{50} = \frac{18}{25}$ cm^2 This is also the area of the rectangle. Thus, the length of the rectangle is found by: $\frac{18}{25} \div \frac{2}{5} = \frac{18}{25} \times \frac{5}{2} = \frac{\cancel{18}^{9} \times \cancel{5}^{1}}{\cancel{25}_{5} \times \cancel{2}_{1}} = \frac{9}{5}$ cm As a mixed number, this is $1\frac{4}{5}$ cm	Correct multiplication Rewriting as a multiplication Correct answer as improper fraction (or mixed number)	1 1 1
4.12 (a)	$\frac{1}{3} + \frac{1}{5} = \frac{5}{15} + \frac{3}{15} = \frac{8}{15}$	Common denominators Correct answer	1 1

Question	Answer	Extra information	Marks
4.12 (b)	$\frac{2}{9}+\frac{5}{6}=\frac{4}{18}+\frac{15}{18}=\frac{19}{18}=1\frac{1}{18}$	Common denominators Correct answer	1 1
4.12 (c)	$1\frac{7}{8}+2\frac{3}{4}=\frac{15}{8}+\frac{11}{4}=\frac{15}{8}+\frac{22}{8}=\frac{37}{8}=4\frac{5}{8}$	Mixed numbers converted to improper fractions Common denominators Correct answer	1 1 1
4.13 (a)	$\frac{7}{9}-\frac{1}{2}=\frac{14}{18}-\frac{9}{18}=\frac{5}{18}$	Common denominators Correct answer	1 1
4.13 (b)	$3\frac{1}{6}-2\frac{3}{4}=\frac{19}{6}-\frac{11}{4}=\frac{38}{12}-\frac{33}{12}=\frac{5}{12}$	Mixed numbers converted to improper fractions Common denominators Correct answer	1 1 1
4.14	Midori is not correct. The denominators are the same, so the numerators can be added: $\frac{2}{5}+\frac{4}{5}=\frac{6}{5}$	Correct explanation	1
4.15	$1-\frac{1}{8}-\frac{2}{3}=\frac{24}{24}-\frac{3}{24}-\frac{16}{24}=\frac{5}{24}$	Common denominator of 24 Partially correct middle step Correct answer	1 1 1

Question	Answer	Extra information	Marks
4.16	$2\frac{4}{5}-\frac{7}{8}+1\frac{1}{20}=\frac{14}{5}-\frac{7}{8}+\frac{21}{20}$ $=\frac{112}{40}-\frac{35}{40}+\frac{42}{40}$ $=\frac{119}{40}\left(=2\frac{39}{40}\right)\text{ m}$	Mixed numbers converted to improper fractions Common denominators Correct answer	1 1 1
4.17	$\frac{3}{4}-\frac{1}{3}=\frac{9}{12}-\frac{4}{12}=\frac{5}{12}$	Common denominators Correct answer	1 1
4.18 (a)	$0.4=\frac{4}{10}=\frac{2}{5}$		1
4.18 (b)	$6\%=0.06$		1
4.18 (c)	$\frac{1}{8}=0.125=12.5\%$		1
4.19 (a)	$\frac{6}{5}=1.2=120\%$		1
4.19 (b)	$0.035=\frac{35}{1000}=\frac{7}{200}$		1
4.19 (c)	$3.6\%=0.036$		1

Question	Answer	Extra information	Marks
4.20	Convert each number to a percentage: 34% $0.3 = 30\%$ $\frac{1}{3} = 33.\dot{3}\%$ $\frac{16}{50} = 32\%$ In order, from smallest: $0.3, \frac{16}{50}, \frac{1}{3}, 34\%$	Convert everything to a percentage (or decimal or fraction with common denominator). Allow one mistake. Three out of four in correct order All in correct order	1 1 1
4.21	$\frac{7}{20} = \frac{35}{100} = 35\%$ $\quad \frac{1}{5} = 20\%$ $35\% + 20\% = 55\%$ $100\% - 55\% = 45\%$ listen to an album	Convert both fractions to percentages Subtracting from 100% Correct answer	1 1 1
4.22	23 or 29	Accept either answer	1
4.23 (a)	$\frac{1}{5} < \frac{1}{4}$		1

Question	Answer	Extra information	Marks
4.23 (b)	$\frac{2}{3} < \frac{3}{4}$		1
4.23 (c)	$\frac{1}{12} < 8\%$		1
4.23 (d)	$0.375 < \frac{7}{18}$		1