
GCSE Mathematics

Ratio and Fractions

Mark Scheme - Grades 5-6

M = method mark, A = accuracy mark (dependent on the preceding M mark), B = independent mark.

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Edexcel-style questions

Q1 Grade 5 Edexcel style

Total: 2

Part	Mark scheme	Marks
(a)	total parts = $3 + 5 = 8$	M1
(a)	girls = $\frac{5}{8}$	A1

Q2 Grade 5 Edexcel style

Total: 1

Part	Mark scheme	Marks
(a)	cats = $\frac{2}{7}$ of the number of dogs	B1

Q3 Grade 5 Edexcel style

Total: 3

Part	Mark scheme	Marks
(a)	blue = $1 - \frac{2}{5} = \frac{3}{5}$	M1
(a)	ratio = $\frac{2}{5} : \frac{3}{5}$	M1
(a)	red : blue = 2:3	A1

Q4 Grade 6 Edexcel style

Total: 4

Part	Mark scheme	Marks
(a)	blue counters = $12 \div 3 \times 5 = 20$	M1
(a)	removed = $\frac{1}{3} \times 12 = 4$	M1
(a)	new red = $12 - 4 = 8$	M1
(a)	new ratio = 8:20 = 2:5	A1

Q5 Grade 6 Edexcel style

Total: 3

Part	Mark scheme	Marks
(a)	students = $15 \times 18 = 270$	M1
(a)	girls = $\frac{2}{3} \times 270$	M1
(a)	girls = 180	A1

AQA-style questions

Q6 Grade 5 AQA style

Total: 2

Part	Mark scheme	Marks
(a)	total parts = $2 + 7 = 9$	M1
(a)	red = $\frac{2}{9}$	A1

Q7 Grade 5 AQA style

Total: 1

Part	Mark scheme	Marks
(a)	pens = $\frac{5}{3}$ of the number of pencils	B1

Q8 Grade 5 AQA style

Total: 3

Part	Mark scheme	Marks
(a)	cows = $1 - \frac{3}{8} = \frac{5}{8}$	M1
(a)	ratio = $\frac{3}{8} : \frac{5}{8}$	M1
(a)	sheep : cows = 3:5	A1

Q9 Grade 6 AQA style

Total: 4

Part	Mark scheme	Marks
(a)	pencils = $16 \div 4 \times 7 = 28$	M1
(a)	removed = $\frac{1}{4} \times 16 = 4$	M1
(a)	new pens = $16 - 4 = 12$	M1
(a)	new ratio = $12:28 = 3:7$	A1

Q10 Grade 6 AQA style

Total: 3

Part	Mark scheme	Marks
(a)	staff = $8 \times 12 = 96$	M1
(a)	full-time = $\frac{3}{4} \times 96$	M1
(a)	full-time staff = 72	A1

OCR-style questions

Q11 Grade 5 OCR style**Total: 2**

Part	Mark scheme	Marks
(a)	total parts = $4 + 5 = 9$	M1
(a)	dogs = $\frac{5}{9}$	A1

Q12 Grade 5 OCR style**Total: 1**

Part	Mark scheme	Marks
(a)	adults = $\frac{4}{9}$ of the number of children	B1

Q13 Grade 5 OCR style**Total: 3**

Part	Mark scheme	Marks
(a)	coffee = $1 - \frac{5}{12} = \frac{7}{12}$	M1
(a)	ratio = $\frac{5}{12} : \frac{7}{12}$	M1
(a)	tea : coffee = 5:7	A1

Q14 Grade 6 OCR style**Total: 4**

Part	Mark scheme	Marks
(a)	cows = $20 \div 5 \times 8 = 32$	M1
(a)	sold = $\frac{2}{5} \times 20 = 8$	M1
(a)	new sheep = $20 - 8 = 12$	M1
(a)	new ratio = $12:32 = 3:8$	A1

Q15 Grade 6 OCR style**Total: 3**

Part	Mark scheme	Marks
(a)	children = $24 \times 5 = 120$	M1
(a)	under 10 = $\frac{3}{8} \times 120$	M1
(a)	children under 10 = 45	A1

Teachably-style questions

Q16 Grade 5 Teachably style

Total: 2

Part	Mark scheme	Marks
(a)	total parts = $3 + 4 = 7$	M1
(a)	apples = $\frac{3}{7}$	A1

Q17 Grade 5 Teachably style

Total: 1

Part	Mark scheme	Marks
(a)	red apples = $\frac{7}{2}$ of the number of green apples	B1

Q18 Grade 5 Teachably style

Total: 3

Part	Mark scheme	Marks
(a)	tulips = $1 - \frac{3}{10} = \frac{7}{10}$	M1
(a)	ratio = $\frac{3}{10} : \frac{7}{10}$	M1
(a)	roses : tulips = 3:7	A1

Q19 Grade 6 Teachably style

Total: 4

Part	Mark scheme	Marks
(a)	tulips = $18 \div 2 \times 9 = 81$	M1
(a)	died = $\frac{1}{3} \times 18 = 6$	M1
(a)	new roses = $18 - 6 = 12$	M1
(a)	new ratio = 12:81 = 4:27	A1

Q20 Grade 6 Teachably style

Total: 3

Part	Mark scheme	Marks
(a)	non-fiction books = $6 \times 14 = 84$	M1
(a)	science books = $\frac{5}{7} \times 84$	M1
(a)	science books = 60	A1

END OF PAPER

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