



GCSE MATHEMATICS

2023 PRACTICE PAPER SET 1 Foundation Tier Paper 1
Mark Scheme

8300/1F

Version 1.1

Principal Examiners have prepared these mark schemes for specimen papers. These mark schemes have not, therefore, been through the normal process of standardising that would take place for live papers.

Further copies of this Mark Scheme are available from aqa.org.uk

Glossary for Mark Schemes

GCSE examinations are marked in such a way as to award positive achievement wherever possible. Thus, for GCSE Mathematics papers, marks are awarded under various categories.

If a student uses a method which is not explicitly covered by the mark scheme the same principles of marking should be applied. Credit should be given to any valid methods. Examiners should seek advice from their senior examiner if in any doubt.

M	Method marks are awarded for a correct method which could lead to a correct answer.
A	Accuracy marks are awarded when following on from a correct method. It is not necessary to always see the method. This can be implied.
B	Marks awarded independent of method.
ft	Follow through marks. Marks awarded for correct working following a mistake in an earlier step.
SC	Special case. Marks awarded within the scheme for a common misinterpretation which has some mathematical worth.
M dep	A method mark dependent on a previous method mark being awarded.
B dep	A mark that can only be awarded if a previous independent mark has been awarded.
oe	Or equivalent. Accept answers that are equivalent. eg accept 0.5 as well as $\frac{1}{2}$
[a, b]	Accept values between <i>a</i> and <i>b</i> inclusive.
3.14...	Allow answers which begin 3.14 eg 3.14, 3.142, 3.1416
Use of brackets	It is not necessary to see the bracketed work to award the marks.

Examiners should consistently apply the following principles

Diagrams

Diagrams that have working on them should be treated like normal responses. If a diagram has been written on but the correct response is within the answer space, the work within the answer space should be marked. Working on diagrams that contradicts work within the answer space is not to be considered as choice but as working, and is not, therefore, penalised.

Responses which appear to come from incorrect methods

Whenever there is doubt as to whether a student has used an incorrect method to obtain an answer, as a general principle, the benefit of doubt must be given to the student. In cases where there is no doubt that the answer has come from incorrect working then the student should be penalised.

Questions which ask students to show working

Instructions on marking will be given but usually marks are not awarded to students who show no working.

Questions which do not ask students to show working

As a general principle, a correct response is awarded full marks.

Misread or miscopy

Students often copy values from a question incorrectly. If the examiner thinks that the student has made a genuine misread, then only the accuracy marks (A or B marks), up to a maximum of 2 marks are penalised. The method marks can still be awarded.

Further work

Once the correct answer has been seen, further working may be ignored unless it goes on to contradict the correct answer.

Choice

When a choice of answers and/or methods is given, mark each attempt. If both methods are valid then M marks can be awarded but any incorrect answer or method would result in marks being lost.

Work not replaced

Erased or crossed out work that is still legible should be marked.

Work replaced

Erased or crossed out work that has been replaced is not awarded marks.

Premature approximation

Rounding off too early can lead to inaccuracy in the final answer. This should be penalised by 1 mark unless instructed otherwise.

Q	Answer	Mark	Comments
1(a)	10	B1	
1(b)	90	B1	
2	$\frac{4}{5}$	B1	
3	$5y + 7x$	B2	oe B1 $5y$ or $7x$
4	Linear scale from zero used for frequency	B1	
	Bars at correct heights and equal widths with equal gaps	B1	
	Bars labelled	B1	
	Vertical axis labelled	B1	eg Number of students, frequency Vertical axis can be horizontal for a horizontal bar chart
5	7.01 7.1 7.11	B1	
6	10	B1	
	36	B1ft	ft 46 – their 10 SC1 174
7	Arrow at 0 labelled B	B1	
	Arrow at $\frac{1}{6}$ labelled C	B1	
8	$180 - 21 - 47$	M1	oe
	112	A1	

Q	Answer	Mark	Comments
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9	Alternative method 1		
	$68 \div 10$	M1	
	6.8 or 6 remainder (8) or 6	A1	May be implied
	7	A1ft	ft their 6.8 rounded up
	Alternative method 2		
	Lists multiples of 10 up to at least 60 or counts down in 10s to at least 8	M1	Allow one error
	$6 \times 10 = 60$ or $7 \times 10 = 70$	A1	May be implied
	7	A1ft	

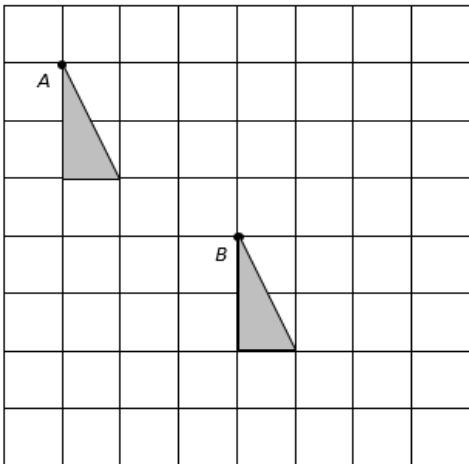
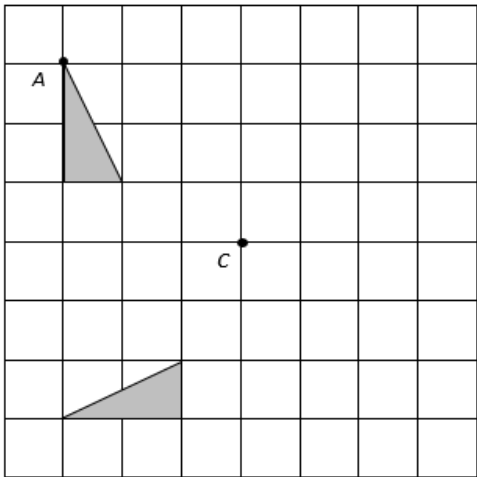
10	$\frac{8}{10}$ or $10 - 5 - 3$ or 2	M1	oe
	$\frac{2}{10}$	A1	oe

11	Plots at least 2 points correctly	M1	
	Plots 3 correct points and Isosceles	A1	SC1 correct type for their 3 points

12(a)	8	B1	
12(b)	10 000	B1	
12(c)	12	B1	

13	$2x = 10 + 7$ or $2x = 17$	M1	
	8.5	A1	oe SC1 1.5

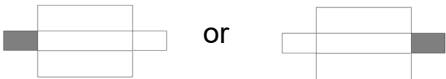

Q	Answer	Mark	Comments
14	Alternative method 1		
	400 – 80 or 320 or 4(.00) – 0.8(0) or 3.2(0)	M1	
	1.60	A1	
	Alternative method 2		
	(400 + 80) ÷ 2 or 240 or (4.00 + 0.8(0)) ÷ 2 or 2.4(0)	M1	
	1.60	A1	
15(a)	[208°, 212°]	B1	
15(b)	[6.8, 7.2]	B1	May be implied by correct answer
	[340, 360]	B1ft	ft their [6.8, 7.2] × 50
16	21 × 9	M1	oe
	189	A1	
	their 189 – 90 or 99	M1	
	their 99 × 8 or 90 × 5	M1dep	ft their 189
	their 99 × 8 + 90 × 5 or 792 + 450 or 1242	M1dep	ft their 189
	1242 and Close	A1ft	ft their 189
17(a)	1 : 2	B1	
17(b)	$\frac{15}{15+5} (\times 100)$ or $\frac{15}{20} (\times 100)$ or $\frac{3}{4} (\times 100)$	M1	
	75	A1	

Q	Answer	Mark	Comments
18	No, and shows a multiple of 5 correctly divided by 2 that gives a whole number answer.	B1	eg No, and $20 \div 2 = 10$
19(a)	<p>Correct translation drawn</p> 	B1	
19(b)	<p>Correct rotation drawn</p> 	B2	B1 for correct rotation but incorrect position on grid.
20	$\frac{1}{2} \times 10^2 \times 7$ or 700	M1	oe
	350	A1	

Q	Answer	Mark	Comments
21	Alternative method 1		
	Lists the multiples of two of 10, 8, 5 10, 20, 30, 40, ... 8, 16, 24, 32, 40, ... 5, 10, 15, ..., 40, ...	M1	Writes out all the multiples to at least 40
	40	A1	May be implied by correct number of boxes
	4 and 5 and 8	B1ft	ft their multiple of 40
	Alternative method 2		
	Lists the prime factors of two of 10, 8, 5 $10 = 2 \times 5$ $8 = 2 \times 2 \times 2$ $5 = 5 (\times 1)$	M1	
	$2 \times 2 \times 2 \times 5$	A1	May be implied by correct number of boxes
	4 and 5 and 8	B1ft	ft their multiple of 40

Q	Answer	Mark	Comments
22(a)	$\frac{3}{10}$ or 0.3 or 30%	B1	
22(b)	(strong) positive	B1	
22(c)	Straight ruled line of best fit	B1	Through (30, 1) to (35, 1) and (60, 6) to (65, 6)
	4	B1	
22(d)	Refers to danger when extrapolating outside the range of the data given or Refers to difficulty of interpolation at certain points eg 35 lessons suggests 1 or 2 tests	B1	oe eg line of best fit might not continue eg 20 lessons suggests 0 tests

23	Alternative method 1		
	$\frac{35}{40}$ or $\frac{48}{40}$	M1	
	Valid comparison eg $\frac{35}{40}$ and $\frac{48}{40}$ and $\frac{40}{40}$ or $\frac{5}{40}$ and $\frac{8}{40}$	M1	oe
	$\frac{7}{8}$	A1	Must see working
	Alternative method 2		
	0.875 or 1.2	M1	87.5(%) or 120(%)
	0.875 and 1.2 and 1 or 0.125 and 0.2	M1	87.5(%) and 120(%) and 100(%) or 12.5(%) and 10(%)
	$\frac{7}{8}$	A1	Must see working

Q	Answer	Mark	Comments
24	$2a = 9$	M1	Subtracts equations to eliminate b
	$a = 4.5$ (or $b = 6$)	A1	oe
	$a = 4.5$ and $b = 6$	A1	
25	$\frac{18 \times BD}{2} = 45$	M1	oe
	$BD = \frac{45 \times 2}{18}$ or 5	M1dep	
	$12^2 + \text{their } 5^2$ or 169	M1	oe
	13	A1	SC2 $\sqrt{119}$ oe
26	$3y - 45 = 4y - 100$	M1	oe
	$4y - 3y = -45 + 100$	M1dep	Collects terms oe
	55	A1	
27(a)	Correct rectangle shaded 	B1	
27(b)	Correct two rectangles shaded 	B1	
27(c)	$2ab + ad + 2cd$	B1	oe

Q	Answer	Mark	Comments
28(a)	Ben and valid reason	B2	eg shortest time took 4.5 minutes B1 Ben with reason attempted.
28(b)	Makes 3 correct statements Must refer to all 3 boys	B3	Max B2 for only referring to 2 boys Max B1 for only referring to 1 boy B1 for each valid statement Valid statements could include: Alan started in the lead (Ben 2nd, Carl 3rd) After 2.5 minutes / 500 m Ben slowed down After 3.5 minutes / 600 m Ben increased speed After 4 minutes / 600 m Carl increased speed After 3 minutes / 800 metres Alan stopped (for 0.25 minutes) After 3.25 minutes Alan set off again Alan and Carl both finish in 5 minutes Ben and Carl both finish at the same speed Finishing order: Ben wins, Alan and Carl tie for 2nd
29	7×2 or 14 and 6×2 or 12	M1	
	their $14 - 11$ or 3 or their $12 + 8$ or 20	M1	
	(3, 20)	A1	

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