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General Certificate of Secondary Education
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Mathematics 43601F

Unit 1 Foundation tier

Final

Mark Scheme

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all examiners participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for standardisation each examiner analyses a number of students' scripts: alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, examiners encounter unusual answers which have not been raised they are required to refer these to the Principal Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

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

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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.

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.
Q	Marks awarded for Quality of Written Communication
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 a and b inclusive.
3.14 …	Allow answers which begin 3.14 eg 3.14, 3.142, 3.149.
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 candidate has used an incorrect method to obtain an answer, as a general principle, the benefit of doubt must be given to the candidate. In cases where there is no doubt that the answer has come from incorrect working then the candidate should be penalised.

Questions which ask candidates to show working

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

Questions which do not ask candidates to show working

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

Misread or miscopy

Candidates often copy values from a question incorrectly. If the examiner thinks that the candidate 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.

Unit 1 Foundation Tier

Q	Answer	Mark	Comments
1a	Cam	B1	
1b	Bars of heights 15, 30 and 35 in the correct positions	B2	B1 for at least one correct bar or all 3 heights correct
1c	25 chosen	M1	
	65	A1	
2	(iPhone) || (Nokia) ||||	B1	SC1 for correct frequencies written in the tally column SC1 for 1 correct row SC2 for 2 correct rows ft their tallies
	(Samsung) 𝍸 |	B1	
	2 4 6	B1ft	
3a	312	B1	
3b	568 or 404	M1	
	164	A1	SC1 for an answer of 109 or 156 or 83
3c	518 ÷ 2 (= 259)	M1	oe
	518 + their 259 (= 777) or 518 × 2 – their 259	M1dep	oe M2 for 518 × 1.5
	Their 777 ÷ 2 (= 388.5)	M1dep	oe M3 for 518 × 0.75
	388.50	Q1	Strand (i) Correct money notation 388.5 scores M3 Q0
Alt 3c	518 ÷ 2 (= 259)	M1	oe
	their 259 ÷ 2 (= 129.5)	M1dep	oe
	their 259 + their 129.5 or 129.5 × 3	M1dep	oe
	388.50	Q1	Strand (i) Correct money notation 388.5 scores M3 Q0

Q	Answer	Mark	Comments
4a	Silver	B1	
4b	$1 + 2 + 4 + 1\frac{1}{2} + 1 + \frac{1}{2}$ (= 10 cars) or a correct number of people for at least one row	M1	Allow one error
	2	A1	
4c	$(4 - 1\frac{1}{2}) \times$ their 2	M1	$4 \times$ their 2 (–) $1\frac{1}{2} \times$ their 2
	5	A1 ft	ft their $2 \times 2\frac{1}{2}$ (rounded or truncated to the nearest integer)
5a	$\frac{2}{10}$	M1	oe fraction, decimal or percentage
	$\frac{1}{5}$	A1	SC1 simplify their fraction correctly
5b	29 + 30 + 30 + 28 + 32 + 31 + 31 + 33 + 30 + 32 (= 306)	M1	Allow one error
	Their 306 ÷ 10	M1	
	30.6	A1	Condone answer of 31 with full method shown SC2 for 277.2
6a	$175 \times \frac{28}{100}$	M1	oe Condone $175 - 175 \times \frac{28}{100}$ oe
	49	A1	
6b	$242 \times \frac{2}{11}$	M1	oe Condone $242 - 242 \times \frac{2}{11}$ oe
	44	A1	
	Saturday and 49 and 44	Q1	Strand (iii) Supporting answers with evidence ft correct decision for their 49 and their 44 if at least one M mark has been scored in parts (a) and/or (b)

Q	Answer	Mark	Comments
7a	120 ÷ 2	M1	oe 180 ÷ $\left(\frac{360}{120}\right)$
	60	A1	SC1 for $\frac{1}{2}$ or 180°
7b	72 ± 2 (degrees) or 24 ± 1 people	B1	
	$\frac{\text{their } 72}{360}$ (× 100)	M1	oe
	[19.4,20.6]	A1	
8a	13	B1	
8b	31	B1	
8c	13	B1ft	ft their integer from part a
9	Two **different** valid criticisms from options not exhaustive options overlap no option for other responses	B2	oe B1 One valid criticism eg no box for less than 5 no box for Don't know
10a	Suitable hypothesis	B1	eg BBC1 viewers are older (than Sky 1 viewers) oe
10b	B D A C	B2	B1 C in the final position
11a	Line of height 4 above 0 goals	B1	
11b	(0 × 4) + 1 × 6 + 2 × 3 + 3 × 4 + 4 × 2 + 5 × 1	M1	(0) + 6 + 6 + 12 + 8 + 5 Allow one error or omission
	37	A1	SC1 41
11c	2 × 21 (– their 37)	M1	2 × 20 (– their 37) + 2
	5	A1 ft	ft their part (b)

Q	Answer	Mark	Comments
12a	Negative	B1	Ignore any other description Accept eg strong negative, weak negative
12b	[118,122]	B1	
13a	0.4 (relative frequency of white) or 1 (pink)	B1	oe
	their 5 ÷ 10 (= 0.5) or 1 – their 0.4 – 0.1 = (0.5)	M1	oe
	Fully correct table ie (4) | 1 | 5 0.4 | (0.1) | 0.5	A1	oe accept equivalent fractions or percentages for relative frequencies throughout
13b	Comment about increasing the sample size	B1	eg she should repeat it more times or sample more balls oe