

Edexcel GCSE

Mathematics B 1388

Paper 5510

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Mark Scheme (Results)

NOTES ON MARKING PRINCIPLES

1 **Types of mark**

M marks: method marks

A marks: accuracy marks

B marks: unconditional accuracy marks (independent of M marks)

2 **Abbreviations**

cao –correct answer only

ft –follow through

isw –ignore subsequent working

SC: special case

oe –or equivalent (and appropriate)

dep –dependent

indep - independent

3 **No working**

If no working is shown then correct answers normally score full marks

If no working is shown then incorrect (even though nearly correct) answers score no marks.

4 **With working**

If there is a wrong answer indicated on the answer line always check the working in the body of the script (and on any diagrams), and award any marks appropriate from the mark scheme.

If it is clear from the working that the “correct” answer has been obtained from incorrect working, award 0 marks. Send the response to review, and discuss each of these situations with your Team Leader.

Any case of suspected misread loses A (and B) marks on that part, but can gain the M marks. Discuss each of these situations with your Team Leader.

If working is crossed out and still legible, then it should be given any appropriate marks, as long as it has not been replaced by alternative work.

If there is a choice of methods shown, then no marks should be awarded, unless the answer on the answer line makes clear the method that has been used.

If there is no answer on the answer line then check the working for an obvious answer.

5 **Follow through marks**

Follow through marks which involve a single stage calculation can be awarded without working since you can check the answer yourself, but if ambiguous do not award.

Follow through marks which involve more than one stage of calculation can only be awarded on sight of the relevant working, even if it appears obvious that there is only one way you could get the answer given.

6 Ignoring subsequent work

It is appropriate to ignore subsequent work when the additional work does not change the answer in a way that is inappropriate for the question: eg. incorrect cancelling of a fraction that would otherwise be correct

It is not appropriate to ignore subsequent work when the additional work essentially makes the answer incorrect eg algebra.

Transcription errors occur when candidates present a correct answer in working, and write it incorrectly on the answer line; mark the correct answer.

7 Probability

Probability answers must be given as fractions, percentages or decimals. If a candidate gives a decimal equivalent to a probability, this should be written to at least 2 decimal places (unless tenths).

Incorrect notation should lose the accuracy marks, but be awarded any implied method marks.

If a probability answer is given on the answer line using both incorrect and correct notation, award the marks.

If a probability fraction is given then cancelled incorrectly, ignore the incorrectly cancelled answer.

8 Linear equations

Full marks can be gained if the solution alone is given on the answer line, or otherwise unambiguously indicated in working (without contradiction elsewhere). Where the correct solution only is shown substituted, but not identified as the solution, the accuracy mark is lost but any method marks can be awarded.

9 Parts of questions

Unless allowed by the mark scheme, the marks allocated to one part of the question CANNOT be awarded in another.

Remember: if you are having difficulty making a decision on how you should mark a candidate response contact your Team Leader for advice, or send the item to review.

Section A				
No	Working	Answer	Mark	Notes
1	$300 \div (5+3+2)$ $= 30$ $30 \times 5, 30 \times 3, 30 \times 2$	H=£150, S=£90, R=£60	3	M1 for $(5+3+2)$ or 10 seen M1 for “£30” $\times 5$ (or 3, or 2) A1 cao
2	(a)	P^{10}	1	B1 cao
	(b)	q^6	1	B1 cao
	(c)	$3x^2$	2	B2 cao (B1 for 3 or x^2 or 3^2)
3	(a)	8 3 0 -1 0 3	2	B2 for correct table (B1 for 1 or 2 correct entries)
	(b)	Graph	2	B1 ft for 6 points plotted correctly B1 ft (if at least B1 in (a)) for points joined with a smooth curve
4		Blocks of height 1, 2 and 4	3	B1 for bars correct width M1 for correct use of frequency density A1 for fully correct labelled histogram
5	$x = 0.0474747\ldots$ $10x = 0.474747\ldots$ $1000x = 47.4747\ldots$ $990x = 47$	$\frac{47}{990}$	2	M1 for 0.0474747... A1 for $\frac{47}{990}$ oe fraction
6		Enlargement at points $(-5,-5), (-5,-7),$ $(-7,-7), (-7,-6)$	3	B3 for correct enlargement (B2 for enlargement of sf $-\frac{1}{3}$ about any other point or for 3 vertices correct $\pm \frac{1}{2}$ sq) (B1 for 2 vertices correct $\pm \frac{1}{2}$ sq or for enlargement of sf $\frac{1}{3}$ centre $(-3, -3)$ or for quadrilateral of correct size and orientation)

Section B				
No	Working	Answer	Mark	Notes
1	$5 \rightarrow 135$ $5.5 \rightarrow 177.(3(75))$ $5.6 \rightarrow 186.(8(16))$ $5.7 \rightarrow 196.(5(93))$ $5.8 \rightarrow 206.(7(12))$ $5.75 \rightarrow 201.(6(09))$ $6 \rightarrow 228$	5.7	4	B2 for trial between 5 and 6 (B1 for trial at 5 or 6) B1 for trial between 5.7 and 5.8 B1 (dep on at least 1 previous B1 scored) for 5.7 NB : Trials should be rounded or truncated to at least 3sf but do not allow any rounding to 200
2	(a)	4 9 16 25 28 30	1	B1 cao
	(b)	Cf graph	2	B1ft (if no more than 1 addition error) for points plotted from cf table ± 1 sq B1 for cf graph (SC: B1 for plots consistently within interval and joined with a smooth curve)
	(c)	24 – 25	1	B1ft from graph
	(d)	18 or 19	2	M1ft for reading of graph at 22 minutes A1 ft from graph for integer answer
3	(a)	738000	1	B1 cao
	(b)	2.05×10^{-2}	1	B1 cao
4		8.2	3	M1 for $6 - -2 (= 8)$ or $2 - 0 (= 2)$ M1 for $\sqrt{8^2 + 2^2}$ A1 for 8.2(462)...
5	$17 \times 6 \tan 60^\circ$	177	4	M1 for $\tan 60^\circ = h / ("20 - 14")$ or $\tan 30^\circ = "20-14" / h$ M1 for $h = "6" \tan 60^\circ$ oe ($=10.3(923)$...) M1 for $\frac{1}{2} \times (20 + 14) \times "h"$ oe A1 for 176.7 – 177