

Edexcel GCSE

Mathematics B 2544

Paper 5543F/10

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Mark Scheme

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If working is crossed out and still legible, then it should be given any appropriate marks, as long as it has not been replaced by alternative work.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

5543F - Section A				
No	Working	Answer	Mark	Notes
1 (a)		5036	1	B1 cao
(b)		3500	1	B1 cao
2 (a)		19, 22	2	B1 for 19 B1 ft for 22 (“19” + 3)
(b)		Add 3 oe	1	B1 for ‘add 3’ or “goes up in 3’s” oe (the explanation must mention the common difference of 3)
3		0.07, 0.3, 0.307, 0.37, 0.73	1	B1 for 0.07, 0.3, 0.307, 0.37, 0.73 (accept 7, 30, 30.7, 37, 73 or 70, 300, 307, 370, 730)
4	$\frac{35}{100} \times 400$ Alternative “400÷10”+“400÷10” +“400÷10”+“40÷2”	140	2	M1 for $\frac{35}{100} \times 400$ oe A1 cao Alternative M1 for “400÷10”+“400÷10”+“400÷10”+“40÷2” oe A1 cao
5 (a)		-7, -1, 5	2	B2 for all values correct (B1 for 1 or 2 values correct)
(b)		Line from (-2, -7) to (2, 5)	2	B2 for straight line from (-2, -7) to (2, 5) [B1ft for at least four “points” correctly plotted or B1 for a single line of gradient 3 or B1 for a single line passing through (0, -1)]

5543F - Section A				
No	Working	Answer	Mark	Notes
6	$60 \div 10 (=6)$, $30 \div 6 (=5)$, $20 \div 4 (=5)$ “6” \times “5” \times “5” <i>Alternative</i> $20 \times 30 \times 60 (=36000)$ $4 \times 6 \times 10 (=240)$ “36000” \div “240”	150	3	M1 for $60 \div 10$ (or 6 seen) or $30 \div 6$ (or 5 seen) or $20 \div 4$ (or 5 seen) [This maybe shown on the diagram in number or picture form] M1 (dep) for “6” \times “5” \times “5” A1 cao <i>Alternative</i> M1 for $20 \times 30 \times 60 (=36000)$ or $4 \times 6 \times 10 (=240)$ M1 (dep) for “36000” \div “240” A1 cao
7	75×3	225	2	M1 for 75×3 oe A1 cao
8 (a)		3g	1	B1 for 3g (accept g3 or 3 \times g or g \times 3)
(b)		5hk	1	B1 for 5hk (accept hk5 oe)
9	$6549 - 5137 (=1412)$ “1412” \times 52 (=73424) “73424” \div 100 Alternative $6549 \times 52 (=340548)$ $5137 \times 52 (=267124)$ “340548” \div 100 – “267124” \div 100	734.24	4	M1 for 6549 – 5137 or 1412 seen M1 (dep) for “1412” \times 52 or 73424 seen M1 for “73424” \div 100 (this depends upon “73424” being the result of a direct product of 52 and units given in the question) A1 cao Alternative M1 for 6549×52 or 340548 seen or 5137×52 or 267124 seen M1 for “340548” \div 100 or “267124” \div 100 (this depends upon “340548” or “267124” being the result of a direct product of 52 and units given in the question) M1 (dep on 1 st M1) for “340548” – “267124” or “340548 \div 100” – “267124 \div 100” A1 cao

5543F - Section A				
No	Working	Answer	Mark	Notes
10	$x^2 + 5x + 2x + 10$	$x^2 + 7x + 10$	2	B2 cao (B1 for x^2 , $5x$, $2x$ and 10 seen irrespective of the sign of each or 3 out of no more than 4 terms with correct signs)

5543F - Section B				
No	Working	Answer	Mark	Notes
1 (a)		17.8	1	B1 for 17.8
(b)		-2	1	B1 for -2
(c)		2.8	1	B1 for 2.8
2 (a)		Parallelogram	1	B1 for parallelogram or trapezium ('parallel' is not enough)
(b)		Angle marked	1	B1 for the angle clearly marked with B or 'obtuse' or a clear indication as to the angle being referred to
(c)		10 – 80	1	B1 for answer in range 10 – 80, inclusive (ie. an acute angle)
3 (a)		26	1	B1 cao
(b)		30	1	B1 cao
4 (a)		(-3, 2)	1	B1 cao
(b)		point at (0, -2)	1	B1 cao
5 (a)		-2	1	B1 cao
(b)	4 – -8	12 or -12	2	M1 for 4 – -8 or -8 – 4 or a number line going from at least -8 to +4 A1 for 12 or -12
6	180 – 113 (360 – 2×113)÷2	67°	2	M1 for 180 – 113 A1 cao <i>OR</i> M1 for (360 – 2×113)÷2 A1 cao Remember to look on the diagram

5543F - Section B				
No	Working	Answer	Mark	Notes
7		$20x$	1	B1 for $20x$ (accept $x20$ or $20\times x$ or $x\times 20$) Ignore “anything” = $20x$ [Note: $x = 20x$ gets B0]
8		16.24	1	B1 cao
9 (a)		25	1	B1 cao
(b)		7	1	B1 for 7 or 7 and -7 or ± 7 or -7 alone
(c)		13	1	B1 cao
10	$\frac{30 \times 4}{0.2}$	600	3	M1 for 2 values rounded correctly to 1 sig fig M1 (indep) for a correct method to divide by a decimal (eg $\frac{30 \times 4 \times 10}{0.2 \times 10}$) A1 cao
11	$2 \times 3 \times 5$ $3 \times 3 \times 5$	15	2	M1 for $2 \times 3 \times 5$ or $3 \times 3 \times 5$ A1 cao OR M1 for listing at least 3 factors of each number (condone one error in each list) A1 cao [SC: B1 for 3 or 5 if M0 scored]