

Edexcel GCSE

Mathematics B 1388

Paper 5534/15

November 2007

advancing learning, changing lives

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If working is crossed out and still legible, then it should be given any appropriate marks, as long as it has not been replaced by alternative work.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

5534/15				
No.	Working	Ans.	Mark	Notes
1 (a)		12	1	B1 cao
(b)		6	1	B1 cao
(c)		2 full circles 1¼ circles	2	B1 for 2 full circles in fourth week B1 for 1 full circle and one quarter in fifth week
2(a)		Diagram	1	B1 cao
(b)		12, 15	1	B1 cao
(c)		20	1	B1 cao
(d)		6	1	B1 cao
3	75 + 85 + 135 = 295 500 – “295”	£2.05	3	B1 for 295 or 2.95 M1 500 – “295” or 5.00 – “2.95” A1 cao
4		80 km	2	B2 for 78 to 82 km (B1 for 8cm ± 2 mm)
5 (a)		Correct drawing	2	B2 (B1 for either angle A correct or for angle B correct)
(b)		5.6 cm or 56 mm	2	B1 ft on triangle (tol ± 2 mm) B1 cm or mm (consistent)
(c)		right angle	1	B1 cao

5534/15				
No.	Working	Ans.	Mark	Notes
6(a)		(3, 3)	1	B1 cao
(b)		(4,0)	1	B1 cao
7 (a)		89 – 91	1	B1 89 – 91
(b)		110	1	B1 109 – 111 or ft on 200 – (a)
(c)(i)		4.0 – 5.0	2	B1 4 – 5
(ii)		40 – 50		B1 40 – 50 or ft 200 ÷ (c)(i)
8(a)		4	1	B1 cao
(b)		11	1	B1 cao
9 (a)		0	1	B1 cao
(b)	$(8+4+5+5+3+2+1)\div 10$	2.8	2	M1 $(8+4+5+5+3+2+1)\div 10$ A1 cao
10	$800 \div 34$	24	2	M1 $800 \div 34$ or 23.5 seen A1 cao SC: B1 for 23 only on answer line
11		$3x + 5y$	2	B2 for $3x + 5y$ oe (B1 for $3x$ or $5y$ oe)
12	3kg peaches is £1.68 $\pounds 2.34 - \pounds 1.68 = \pounds 0.66$ $\pounds 0.66 \div 2 = \pounds 0.33$	£0.33 or 33p	3	M1 $2 \times \pounds 0.84$ or digits 168 seen M1(dep) digits 234 – digits “168” or digits 66 seen A1 £0.33 or 33p (units consistent with answer)

5534/15				
No.	Working	Ans.	Mark	Notes
13(a)	$450 \times 28 = 12600\text{p} = \text{£}126$ $15 \times 9.51 = \text{£}142.65$ $\text{£}142.65 + \text{£}126 =$	268.65	3	M1 for 450×28 or 0.28×450 or digits 126 seen M1 for 15×9.51 or 951×15 or digits 14265 seen A1 cao
(b)	$\frac{15}{450} = \frac{1}{30}$	$\frac{1}{30}$	2	M1 for $\frac{15}{450}$ A1 for $\frac{1}{30}$ SC B1 for 0.03 (.....) or 3.33(.....)%
(c)	360×1.175 or $360 \times \frac{17.5}{100} = 63$ $360 + 63$	£423	3	M2 for 360×1.175 oe A1 cao Or M1 for $360 \times \frac{17.5}{100}$ (=63) Or attempt at 10%, +5%, +2.5% eg digits 36+18+9 M1 (dep) 350 + "63" A1 cao
14	$\Sigma \text{freq} = 60$ $360^\circ \div 60 = 6^\circ$ $15 \times 6 = 90$ Cow $12 \times 6 = 72$ Hen $5 \times 6 = 30$ Pig $28 \times 6 = 168$ Sheep	90 72 30 168	4	M1 evidence of method for at least one angle (could be implied by 1 correct angle drawn, or 1 other than 90° in the table). A2 All three angles drawn ($\pm 4^\circ$ tolerance, any order) (A1 at least 2 angles of 3 correctly drawn $\pm 4^\circ$, or all 3 angles, other than 90° , in the table) B1 (dep on at least 1 angle drawn correctly, and exactly 4 sectors) for labels (names of animals only) NB mark table or pie chart to the benefit of the candidate if inconsistent

5534/15				
No.	Working	Ans.	Mark	Notes
15	$24 \div (1 + 3)$ 6×3	£18	2	M1 for $24 \div (1 + 3)$ or 6 seen A1 cao
16(a)		1010	1	B1 (accept 10.10am , 10.10pm, ten past ten etc)
(b)		6.0 to 7.5 exclusive	1	B1 for 6.0 to 7.5 exclusive
(c)		30	1	B1 cao
(d)		graph	1	B1 cao Line from (11.10, 20) to (11.50, 0) (± 2 mm) Accept freehand line if intention is clear
(e)		40	2	M1 $20 \div 30$ or $20 \div 0.5$ oe or 0.6 or 0.66..... A1 cao SC B1 for $20 \div 40$ in working or 0.5 or 30 given as answer.
17	$4y + 3 = 2y + 8$ $2y = 5$	2.5	3	M1 for $2y + 8$ M1 for isolating the lettered and number terms A1 2.5 oe
18	$3.14..... \times 10^2$	314 cm^2	3	M1 for $\pi \times 10^2$ A1 for 314 or better B1 ft for correct units of cm^2