Edexcel GCSE

Mathematics B 2544
Paper 5542F/08

November 2007

Mark Scheme

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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   appropriate marks, as long as it has not been replaced by alternative work.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 a 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.

5542F - Section A				
No.	Working	Answer	Mark	Notes
1 (a)		3	1	B1 cao
(b)		Elaine	1	B1 cao
(c)		Becky	1	B1 cao
2		(12) **7** (8) **27** **17** (11) **6** (34) (29) (18) **14 61**	3	B3 for a fully correct table (B2 for 4 or 5 correct entries, B1 for 1 or 2 or 3 correct entries)
3 (a)(i)		10	3	B1 cao
(ii)	$30 \div 5 = 6^{o}$ per student $360 \div 6$	60		M1 for $360 \div 6$ oe or $(5+"10")\times4$ or 5×12 or $(360 \div 30) \times 5$ or $5+10+15+30$ or any valid method A1 cao
(b)	$\dfrac{60}{360}$	$\dfrac{1}{6}$ oe	1	B1 for $\dfrac{1}{6}$ oe (ft from $\dfrac{"(i)"}{"(ii)"}$ if answer $\leq \dfrac{1}{4}$
4	$0\times5+2\times16+4\times6+20\times2+30\times1$ $= 0+32+24 +40+30$ $=126$ $126 \div 30$	4.2(0)	3	M1 for $0\times5 + 2\times16 + 4\times6 + 20\times2 + 30\times1$ or at least 3 correct entries of 0,32,24,40,30 in the table or 126 seen M1 (dep) for "126" $\div$ 30 A1 cao **SC**: Award M2 for $131 \div 30$ with or without working

5542F - Section A				
No.	Working	Answer	Mark	Notes
5	$\dfrac{1}{6} + \dfrac{1}{6} = \dfrac{2}{6}$	$\dfrac{1}{3}$ oe	2	M1 for $\dfrac{1}{6}$ oe seen or identifying both the 2 and 3 sections in a sample space diagram of {1,2,3,4,5,6} A1 for an answer of $\dfrac{1}{3}$ oe NOTE: An answer of 2 in 6, 2 out of 6, 2 : 6, oe = M1 A0

No.	Working	Answer	Mark	Notes
5542F - Section B				
1 (a)		Completed bar chart	2	B1 for Platy bar 5 high B1 for Tetra bar 7 high
(b)		Tetra	1	B1 (accept 7)
(c)		21	1	B1
(d)		Incorrect numbering on the frequency axis 4 6 8 10 missing Label missing for one type of fish	2	B2 for two correct reasons eg numbers wrong, name missing, no title (B1 for one correct reason)
2 (a)		Likely	1	B1 for certain or likely or both
(b)		Even chance	1	B1 cao
3 (a)		Cost is less the further you are from the city centre	1	B1 for decrease in cost with increase in distance. Accept negative correlation
(b)		Line between (1,1.00), (1,1.20) and (9, 0.45), (9, 0.64) inc	1	B1 for a straight line within guidelines with at least 2 points on either side of the line
(c)		Their reading for 4.5km	1	B1ft for a reading for the cost ($\pm$ 1 square) from "line of best fit" at 4.5 ± 0.1 (dep on a straight line of negative gradient in (b))
4 (a)	$98 - 71$	27	2	M1 for $98 - 71$ or $71 - 98$ or $8 - 1$ or $1 - 8$ or -27 or $2\ 7$ seen A1 cao
(b)	6th score	83	2	M1 for 6 seen or an answer of 3 or $8\ 3$ or the 3 may be indicated on the diagram A1 cao