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Mark Scheme (Results)

November 2010

GCSE

GCSE Mathematics (5381H)
Paper 6B

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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
isw – ignore subsequent working
oe – or equivalent (and appropriate)
indep - independent
ft – follow through
SC: special case
dep – dependent

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If working is crossed out and still legible, then it should be given any appropriate marks, as long as it has not been replaced by alternative work.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 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.
If there is no answer on the answer line then check the working for an obvious answer.
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 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.

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: e.g. incorrect canceling 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 e.g. 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

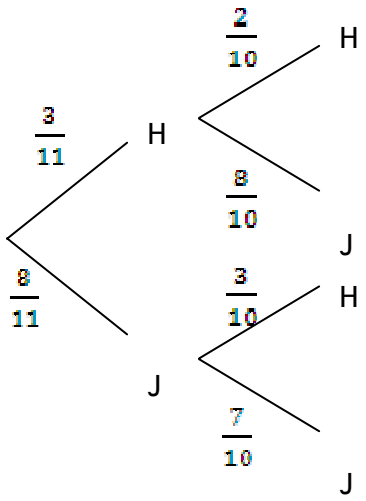
Unless allowed by the mark scheme, the marks allocated to one part of the question CANNOT be awarded in another.

10 Range of answers

Unless otherwise stated, when an answer is given as a range (e.g 3.5 – 4.2) then this is inclusive of the end points (e.g 3.5, 4.2) and includes all numbers within the range (e.g 4, 4.1)

5381H/6B				
Question	**Working**	**Answer**	**Mark**	**Notes**
B1 (a)		2 comments	2	B1, B1 eg for responses boxes too vague oe eg for no time frame
(b)		How much do you spend at the supermarket each week? and at least 3 non overlapping tick boxes to include zero and/or more	2	B1 for an appropriate question with a specific time frame, do not accept each visit B1 for at least 3 non-overlapping boxes. They also need to cover zero and/or "more than" e.g. none and £100+ Do not accept frequency tables or data collection sheets
B2 (a)		Valid statement	1	B1 for statement e.g. the higher the maths mark the higher the science mark, or the lower the science mark the lower the maths mark or as the maths mark goes up the science mark goes up or as the maths mark goes down the science mark goes down etc. (accept positive correlation)
(b)		Line of best fit	1	B1 for line between (5, 20) and (5, 30) and between (50, 62) and (50, 76)
(c)		36 ≤ answer ≤ 42	1	B1 for 36 ≤ answer ≤ 42 or ft from their straight line segment of positive gradient tolerance ± 1 mark
B3	(38 + 33 + 40 + 53) ÷ 4 = 164 ÷4 (33 + 40 + 53 + 62) ÷ 4 = 188 ÷4	41, 47	2	M1 for (38 + 33 + 40 + 53) ÷ 4 or 164 ÷ 4 or 41 or (33 + 40 + 53 + 62) ÷ 4 or 188 ÷ 4 or 47 A1 for both correct

Question	Working	Answer	Mark	Notes
B4		2 differences	2	B1 for comparison of spread eg The range (or inter quartile range) of the boys pocket money is greater than the range of the girls pocket money eg Both the boys and the girls pocket money is neither positively or negatively skewed B1 for comparison of a specific value eg Highest pocket money for the boys is lower than the highest pocket money for the girls eg The girls median is greater than the boys median or another comparison of a different measure of spread.

Question	Working	Answer	Mark	Notes
B5	$(\frac{3}{11} \times \frac{2}{10}) + (\frac{3}{11} \times \frac{8}{10}) + (\frac{8}{11} \times \frac{3}{10})$ $= \frac{6+24+24}{110}$ or $1 - (\frac{8}{11} \times \frac{7}{10})$  	$\frac{54}{110}$	4	B1 for $\frac{2}{10}$ or $\frac{8}{10}$ or $\frac{3}{10}$ seen as non replacement M1 for $(\frac{3}{11} \times \frac{2}{10})$ or $(\frac{3}{11} \times \frac{8}{10})$ or $(\frac{8}{11} \times \frac{3}{10})$ M1 for $(\frac{3}{11} \times \frac{2}{10}) + (\frac{3}{11} \times \frac{8}{10}) + (\frac{8}{11} \times \frac{3}{10})$ A1 for $\frac{54}{110}$ o.e. **Alternative scheme for 1 –p(jam, jam)** B1 for $\frac{7}{10}$ seen as non replacement M2 for $1 - (\frac{8}{11} \times \frac{7}{10})$ or $1 - (\frac{56}{110})$ A1 for $\frac{54}{110}$ **Alternative scheme for replacement** B0 for $\frac{3}{11}$ or $\frac{8}{11}$ or $\frac{3}{11}$ seen as 2nd probability M1 for $(\frac{3}{11} \times \frac{3}{11})$ or $(\frac{3}{11} \times \frac{8}{11})$ or $(\frac{8}{11} \times \frac{3}{11})$ M1 for $(\frac{3}{11} \times \frac{3}{11}) + (\frac{3}{11} \times \frac{8}{11}) + (\frac{8}{11} \times \frac{3}{11})$ A0 for $\frac{57}{121}$ o.e.

Question	Working	Answer	Mark	Notes
				Alternative scheme for 1 –p(jam, jam)with replacement B0 for $\frac{8}{11}$ seen as non replacement M2 for $1 - (\frac{8}{11} \times \frac{8}{11})$ or $1 - (\frac{64}{121})$ A0 for $\frac{57}{121}$ **Special cases** S.C. Award B3 for an answer of $\frac{48}{110}$ obtained from taking exactly one jar of honey S.C. Award B2 for $\frac{57}{121}$ or $\frac{54}{121}$ or $\frac{57}{110}$ or $1 - (\frac{8}{11} \times \frac{8}{11})$ or $\frac{65}{121}$ or $\frac{46}{110}$ S.C. Award B1 for $\frac{2}{11}$ and $\frac{8}{11}$ and $\frac{3}{11}$ or $\frac{3}{10}$ and $\frac{8}{10}$ and $\frac{3}{10}$ seen as 2nd probabilities if B2 not scored.

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