Mark Scheme (Results)

November 2011

GCSE Mathematics (2381)
Paper 5383H_10 (Calculator)

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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      If working is crossed out and still legible, then it should be given any appropriate marks, as long as it has not been replaced by alternative work.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   Money notation
Accepted with and without the "p" at the end.

11   Range of answers
Unless otherwise stated, when any 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).

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Question	**Working**	**Answer**	**Mark**	**Notes**
1		$2c - 4d$	2	B2 cao (B1 for $2c$ or $-4d$)
2		2^8	1	B1 cao
3	$720 \times \dfrac{17.5}{100}$ OR $72 + 36 + 18$	£126	2	M1 for $720 \times \dfrac{17.5}{100}$ oe A1 cao OR M1 for a complete method to build up to 17.5%, eg $72 + 36 + 18$, $72 + 36 + 7.2 + 7.2 + 3.6$ A1 cao SC B1 for (£)846 or (£)594

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Question		Working	Answer	Mark	Notes
4	(i)		76	2	B1 cao
	(ii)		Full reasons		B1 for angles (on a) straight line (add up to) 180° **and** either corresponding angles (are equal) or alternate angles (are equal) OR vertically opposite angles (are equal) **and** co-interior angles/allied angles (add up to) 180° OR vertically opposite angles (are equal) **and** corresponding angles (are equal) **and** angles (on a) straight line (add up to) 180°

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Question		Working								Answer	Mark	Notes
5										Correct straight line graph drawn	3	**(Table of values)** M1 for at least 2 correct attempts to find points by substituting values of x. M1 ft for plotting at least 2 of their points (any points plotted from their table must be correct) A1 for correct line between 0 and 4 OR **(No table of values)** M2 for at least 2 correct points (and no incorrect points) plotted or line segment of $2x + y = 8$ drawn (ignore any additional incorrect segments) (M1 for at least 3 correct points with no more than 2 incorrect points) A1 for correct line between 0 and 4 OR **(Use of $y=mx+c$)** M2 for line segment of $2x + y = 8$ drawn (ignore any additional incorrect segments) (M1 for line drawn with gradient of -2 OR line drawn with a y intercept of 8 and a negative gradient) A1 for correct line between 0 and 4

Working table:

-1	0	1	2	3	4	5
10	8	6	4	2	0	-2

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Question	**Working**	**Answer**	**Mark**	**Notes**
6	$0.2 \times 0.2 \times 8 \div 2 = 0.16$ m^3 $1424 \div 0.16 = 8900$	Copper	3	M1 for attempt to use consistent units and calculate volume eg '0.2'×'0.2'×8 ÷ 2 (=0.16) or 20×20×'800'÷2 (=160000) M1 for attempt to divide mass by volume, $1424 \div$ '0.16' A1 8900 and Copper OR M1 for attempt to use consistent units and calculate volume eg '0.2'×'0.2'×8 ÷ 2 (=0.16) or 20×20×'800'÷2 (=160000) M1 for attempt to multiply density by volume, 8900 × '0.16' A1 1424 and Copper
7	$2.3 \times 21.16 = 48.668$ $\sqrt{(48.668)}$	6.9762…	2	M1 for use of bidmas eg 21.16, $\dfrac{529}{25}$, 48.668 , 48.6, 48.7, 48.66, 48.67, or $\dfrac{12167}{250}$ A1 6.9762….

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Question		**Working**	**Answer**	**Mark**	**Notes**
8	(a)		$3(x + 1)$	1	B1 for $3(x +1)$ or $3x + 3$
	(b)	$\dfrac{4x^2 y}{6x}$	$\dfrac{2xy}{3}$	2	B2 for $\dfrac{2xy}{3}$ (B1 for $\dfrac{4xy}{6}$ or $\dfrac{2x^2 y}{3x}$)
9		Join O to T Angle $OTP = 90^\circ$ Angle $SOT = 124^\circ$ Angle $OTR = 62^\circ$ Angle $PTQ = 28^\circ$ OR Join S to T. Angle $RTS = 90^\circ$ Angle $STP = 62^\circ$ Angle $PTQ = 28^\circ$	28	4	M1 for Angle OTP= 90 or angle OSP = 90, can be marked on diagram M1 for correct method to find angle OTR eg $(180 – 56) ÷ 2$ or 62 seen, can be marked on diagram M1 for Angle $PTQ = (180 – 90 – '62')$ A1 cao OR M1 for Angle RTS = 90 or angle STQ = 90, can be marked on diagram M1 for correct method to find angle STP eg $(180 – 56) ÷ 2$ or 62 seen, can be marked on diagram M1 Angle $PTQ = (90 – '62')$ A1 cao
10		$\dfrac{(2x + y)(x + y)}{(x - y)(x + y)}$	$\dfrac{(2x + y)}{(x - y)}$	3	B1 for $(2x + y)(x + y)$ B1 for $(x - y)(x + y)$ B1 for $\dfrac{(2x + y)}{(x - y)}$ or $\dfrac{2x + y}{x - y}$

Ofqual

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