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Mark Scheme (Results)

January 2016

Pearson Edexcel Level 2 Award in Algebra (AAL20)

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If working is crossed out and still legible, then it should be given any appropriate marks, as long as it has not been replaced by alternative work.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

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

8 Use of ranges for answers

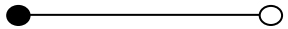
If an answer is within a range this is inclusive, unless otherwise stated.

AAL20_01 January 2016 Level 2					
Question		**Working**	**Answer**	**Mark**	**Notes**
1	(a)		$5x + y + 1$	2	M1 Collect like terms displayed for either *x*,*y* or constants A1
	(b)(i)		p^5	2	B1 cao
	(ii)		t^5		B1 cao
	(c)		$12r + 8r^2$	2	B2 all terms correct (B1 for one correct term)
	(d)		$10x + 9$	2	M1 for expansion of either bracket eg $4x - 12$ or $6x + 21$ A1
2	(a)		8 (7) 6 5 (4) 3 2	2	B2 for 5 correct values (B1 for 3 or 4 correct values)
	(b)			2	M1 ft plotting all their points A1 correct line

AAL20_01 January 2016 Level 2					
Question		**Working**	**Answer**	**Mark**	**Notes**
3	(a)		6	1	B1 cao
	(b)		2	2	M1 for subtracting 4 from both sides or dividing by 8 throughout A1 cao
	(c)		-0.75	3	M1 for $6x + 3 = 2x$ or $2x + 1 = \frac{2x}{3}$ M1 for $4x + 3 = 0$ or $4x = -3$ or $-4x = 3$ A1 oe
	(d)		0.8	3	M1 $5y + 2 = 6$ or $\frac{5y}{3} + \frac{2}{3} = 2$ M1 $5y = 4$ A1 oe
4	(a)		$24p + 7q$	2	M1 for $24p$ or $7q$ oe A1 $24p + 7q$
	(b)		$6T$	1	B1 oe
	(c)		$\frac{100T}{24}$	2	M1 $T \div 24$ oe or $T \times 100$ oe A1 oe

AAL20_01 January 2016 Level 2					
Question		**Working**	**Answer**	**Mark**	**Notes**
5	(a)		2	2	M1 for substituting 3 into the formula A1 cao
	(b)		$t = \frac{3w+6}{4}$	3	M1 for correct first step, eg $3w = 4t - 6$ M1(dep M1) for correct second step, eg $4t = 3w + 6$, $\frac{3w}{4} = t - \frac{6}{4}$ A1 oe
	(c)		-1	3	M1 for $5^2 = 25$ M1 for $2 \times 12 -$ "25" A1 cao
6	(a)		Sketch with label at $(0, -3)$	3	B1 General shape in all 4 quadrants B1 Symmetry about the y-axis B1 for intersection of y-axis at -3 shown
	(b)		Very large	1	B1 Statement

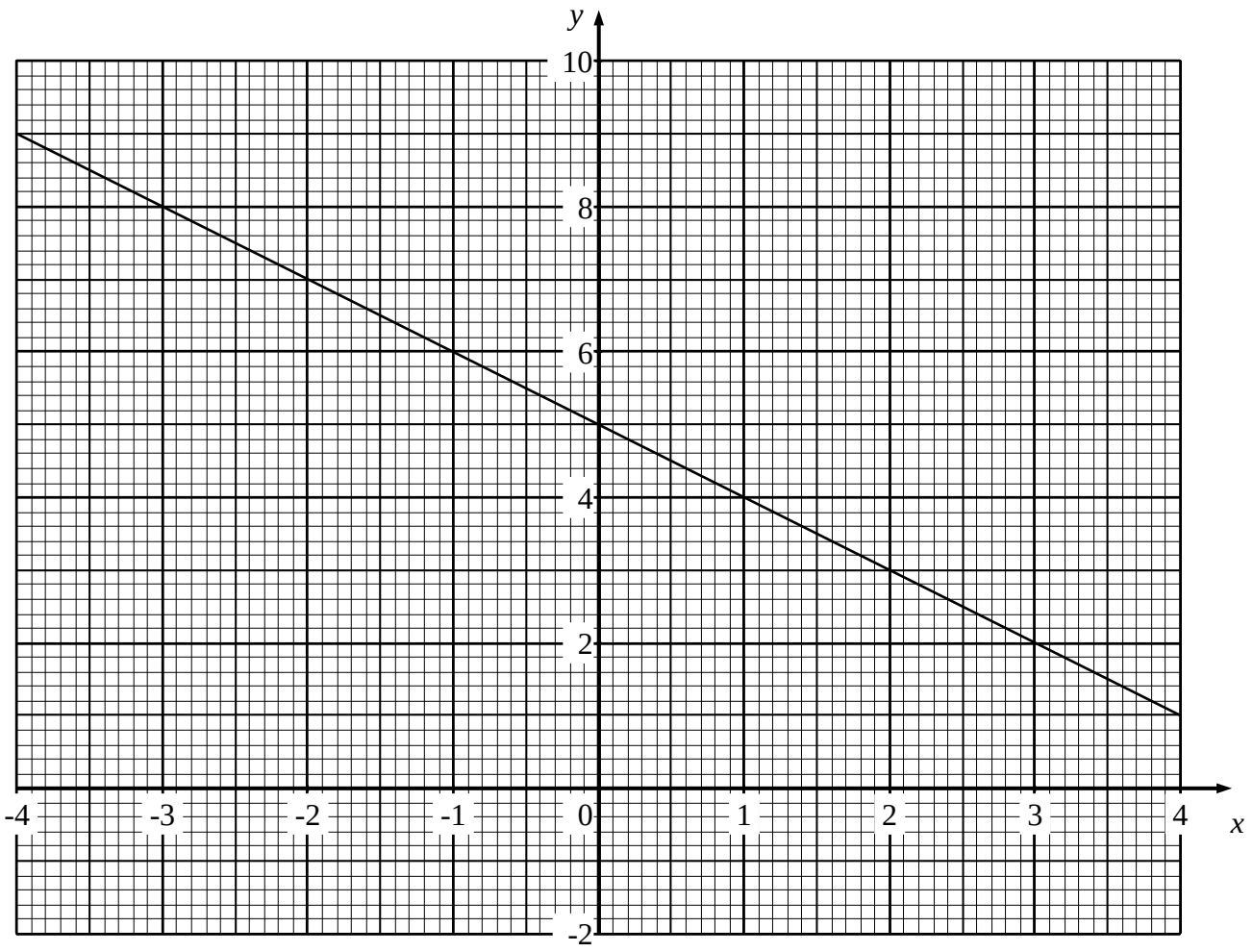
AAL20_01 January 2016 Level 2					
Question		**Working**	**Answer**	**Mark**	**Notes**
7	(a)		$3x(y-2)$	2	B2 for $3x(y-2)$ (B1 for correct partial factorisation, $3(xy-2x)$ or $x(3y-6)$)
	(b)		$3n^2(2n+5)$	2	B2 for $3n^2(2n+5)$ (B1 for correct partial factorisation as product of 2 terms in n, $n^2(6n+15)$, $3n(2n^2+5n)$, $n(6n^2+15n)$)
	(c)		$r^2t^2(t-1)$	2	B2 $r^2t^2(t-1)$ (B1 Correct partial factorisation with one factor including r^2, t^2 or rt)
8	(a)		$3, \frac{1}{2}$	2	B1 for 3 as first term B1 for $\frac{1}{2}$ or 0.5 as second term
	(b)		$8n + 50$	2	M1 for $8n$ (+ c) A1 for $8n + 50$ oe
	(c)(i)		9, 11	4	B1 for 9 as first term B1 for 11 as second term
	(ii)		18(th)		M1 for $43 = 2n + 7$ or $(43 - 7) \div 2$ oe A1 cao

AAL20_01 January 2016 Level 2					
Question		**Working**	**Answer**	**Mark**	**Notes**
9	(a)		3	2	M1 for a complete method to find the gradient A1 cao
	(b)		$y = -2x + 1$	2	M1 for using $m = -2$ oe, eg ($y =$) $-2x + c$ or for ($y =$) $mx + 1$ A1 for $y = -2x + 1$ oe
10			$-1, 2$	1	B1 for $-1, 2$
11	(a)		Diagram drawn	2	B1 for line from -1 to 3 B1 correct circles on the line
	(b)		$-6,-5,-4,-3$	2	B2 (B1 for at least 3 correct values and not more than one incorrect)
	(c)		$-2 \leq x \leq 5$	2	B2 for $-2 \leq x \leq 5$ (B1 for $(x) \geq -2$ or $(x) \leq 5$) **NB** Accept the use of any letter other than x and ignore attempts to list integer values
	(d)		$m \geq -0.5$	3	M1 for adding m to both sides or subtracting 7, 5 or $3m$ from both sides M1 for a complete method A1 $m \geq -0.5$ or $m \geq -\frac{1}{2}$ (SC B2 for critical value of -0.5 oe)

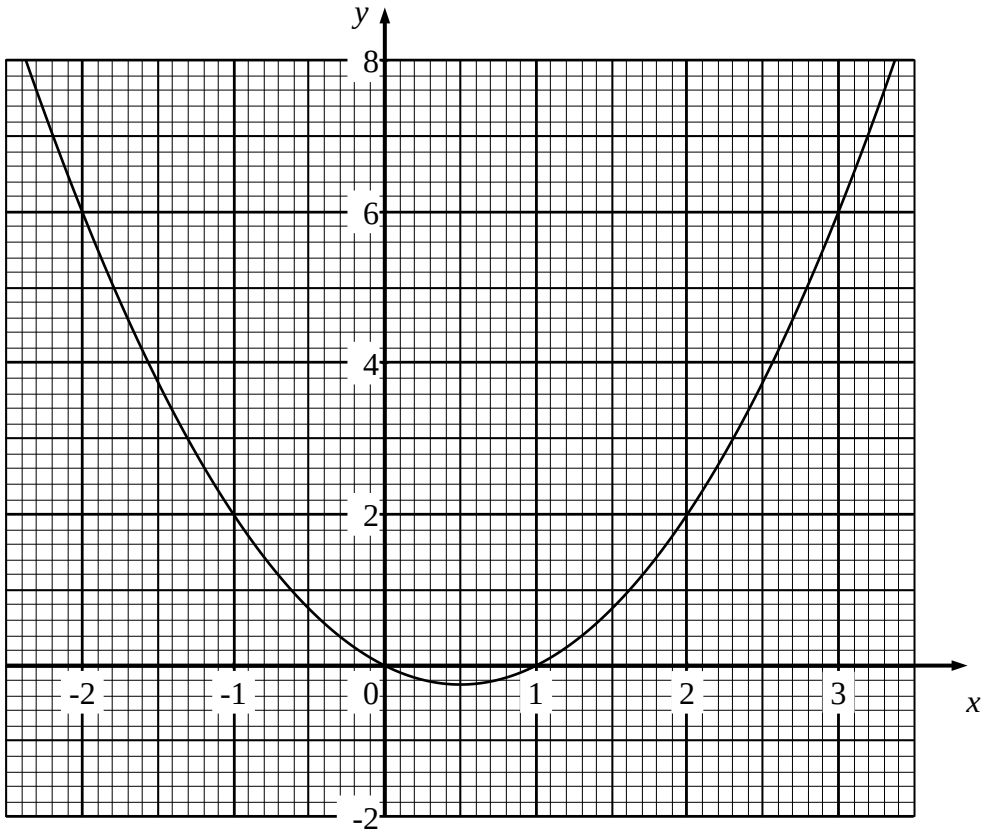
AAL20_01 January 2016 Level 2					
Question		**Working**	**Answer**	**Mark**	**Notes**
12	(a)		(6), 2, (0), 0, 2, 6	2	B2 for all 4 missing values correct (B1 for 2 or 3 missing values correct)
	(b)		Curve drawn	2	B2 for correct curve between $x = -2$ and $x = 3$ (B1 for plotting their points correctly)
	(c)		−1.3 or 2.3		B1 for value between –1.5 and –1.1 or ft from their curve B1 for value between 2.1 and 2.5 or ft from their curve
13			B A D C	2	B2 for all correctly identified (B1 for 2 or 3 correctly identified)

AAL20_01 January 2016 Level 2					
Question		**Working**	**Answer**	**Mark**	**Notes**
14	(a)		Line from (0,0) to (15,12) indicated	1	B1 correct line identified
	(b)		48	2	M1 ft their chosen line, for a method to find gradient, eg $\frac{12}{15}$ A1ft
	(c)		Lines drawn	3	B2 for a straight line from (10,0) to (40,16) (B1 for a line segment of correct gradient or a straight line starting at (10, 0)) B1 ft for a horizontal line of length 2 squares from "(40,16)"

Question 2



Question 12



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