



Mark Scheme (Results)

January 2019

Pearson Edexcel Level 2 Award
In Algebra (AAL20)

Paper 1

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If working is crossed out and still legible, then it should be given any appropriate marks, as long as it has not been replaced by alternative work.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

Question	Working	Answer	Mark	Notes
1		Equation, formula, expression, equation	3	B3 for all correct answers (B2 for 3 correct answers) (B1 for 2 correct answers)
2	(a)	$x < 14$	1	B1
	(b)	$y \geq -2$	2	M1 for subtracting 7 from both sides or dividing all terms by 2 or for -2 as the critical value A1 $y \geq -2$
3	(a)	3	2	M1 for subtracting 2 from both sides or dividing all terms by 5 A1 cao
	(b)	5	2	M1 for a complete method to isolate terms in n A1 cao
	(c)	7.5	3	M1 for dealing with the denominator of 3 M1 for a complete method to isolate term in x A1 7.5 oe
4	(a)	Sketch drawn	3	B1 General shape (inverted parabola) in all 4 quadrants B1 Symmetry about the y -axis B1 for label at intercept of y -axis, eg (0, 25)
	(b)	Statement	1	B1 eg y becomes large negative oe

Question	Working	Answer	Mark	Notes
5		$x + y$	1	B1 for $x + y$
		$12m + 10v$	2	M1 for $12m$ or $10v$ A1 oe
6		$3x + 7y + 7a$	2	M1 for $3x$ or $7y$ A1 for $3x + 7y + 7a$ oe
		y^7	1	B1 cao
		n^4	1	B1 cao
		$36x^6$	2	M1 for 36 or x^6 A1 cao
7		k^5	1	B1 cao
		$10e + 15f$	1	B1 $10e + 15f$ oe
		$3x + 9y$	2	M1 for expanding the brackets, $6x + 12y - 3x - 3y$ A1 $3x + 9y$
8		50	1	B1 cao
		22	3	M1 one correct reading from the graph or both points indicated, eg 39, 39.5, 60.5, 61 M1 for method to find the difference in °F with at least 1 correct reading, eg 61 - 39 (can be shown on graph) A1 22 (accept 21 - 22)

Question	Working	Answer	Mark	Notes
9				
(a)		$x(6 + y)$	1	B1 $x(6 + y)$
(b)		$3ab(1 + 2c)$	2	M1 for a correct partial factorisation with at least 3 factors A1 $3ab(1 + 2c)$
(c)		$wy(5w - y)$	2	M1 for a correct partial factorisation A1 $wy(5w - y)$
10				
(a)		$y = -2x + 3$	3	M1 for correct method to find the gradient eg sight of right-angled triangle with their height divided by their base, must deal with negative nature of the gradient. M1 for $y = "-2" x + c$ or $y = mx + 3, m \neq 0$ A1 for $y = -2x + 3$ oe
(b)		Line drawn	1	B1 Correct line through (0, 3)
11				
(a)		2, (-2), (-4), -4, (-2), 2, 8	2	B2 all values correct (B1 for 2 or 3 correct values)
(b)		Graph drawn	2	M1 ft (dep B1 in (a)) 6 or 7 of their points correct A1 cao with smooth curve drawn
(c)		0.4 to 0.6 or -3.4 to -3.6	2	M1 for any correct method using the graph eg marks on the x -axis intersects or one correct answer given A1 ft NB for ft graph must be quadratic

Question	Working	Answer	Mark	Notes
12 (a)		150	2	M1 for correct substitution of 5 and 6 A1 cao
(b)		4 or -4	2	M1 for $(r^2) = 80 \div 5 (= 16)$ A1 for 4 or -4 or ± 4
(c)		$h = \frac{v}{r^2}$	1	B1 oe
13 (a)		$x > -1$	1	B1
(b)		Diagram completed	2	B2 for fully correct solution with all four aspects with no ambiguity Aspect 1: circles at 1 and 6 Aspect 2: circle not shaded at 1 Aspect 3: circle shaded at 6 Aspect 4: line between 1 and 6 (B1 for any two aspects)
(c)		22	1	B1 cao
(d)		$f < 6$	3	M1 for subtracting 5 from both sides or multiplying all terms by 3 M1 for a complete method to isolate term in f or a critical value of 6 A1 $f < 6$

Question		Working	Answer	Mark	Notes
14	(a)		60	1	B1 cao
	(b)		0	1	B1 cao
15	(a)(i)		19	1	B1 cao
	(ii)		35	1	B1 ft from (a)
	(iii)		$4n - 1$	2	M1 for $4n (+ c)$ A1 for $4n - 1$ oe
	(b)(i)		1	2	M1 for correct substitution of 3 A1 cao
	(ii)		No and explanation	2	M1 sets $17 = 7 - 2n$ or writes out at least 4 terms or states sequence is decreasing A1 No and gives a reason eg sequence starts at 5 and goes down or $n = -5$
16	(a)		$25 + e + 15$	1	B1 $25 + e + 15$ oe
	(b)		80	1	B1 oe
	(c)		5	2	M1 for reading distance and time from the correct section of the graph eg 30 mins and 2.5 km A1 cao
	(d)		Lines drawn	2	B1 for a line from (1430, 5) to (1500, 5) B1 for a line from '(1500, 5)' to ('1500' + 40, 2.5)

Question	Working	Answer	Mark	Notes
17		24	3	M1 for a correct first step eg adding 8 to both sides M1 for a full method to isolate terms in x A1 cao

Qu11 b



