



Mark Scheme (Results)

Summer 2019

Pearson Edexcel Level 2 Award
In Algebra (AAL20)
Paper 01

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If working is crossed out and still legible, then it should be given any appropriate marks, as long as it has not been replaced by alternative work.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

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.

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Question		Answer	Mark	Notes
1	(a)	$3m^2$	1	B1 oe
	(b)	d^4	1	B1
	(c)	$5n^2$	1	B1 oe
	(d)	$16s^4t^2$	2	M1 for any 2 of 16, s^4 , t^2 correct in a product A1 oe
2	(a)	$2(t - 3)$	1	B1 oe
	(b)	$pw(1 + w)$	2	B2 for $pw(1 + w)$ oe (B1 for correct partial factorisation with 2 factors, $p(w + w^2)$, $w(p + pw)$)
	(c)	$5x^2(2 - x)$	2	B2 for $5x^2(2 - x)$ (B1 for correct partial factorisation with 2 factors in x , $x(10x - 5x^2)$, $5x(2x - x^2)$, $x^2(10 - 5x)$) Note: for all answers the correct expression may be seen in a different order of factors
3	(a)	12	2	M1 for multiplying out the bracket or dividing both sides by 3 A1 cao
	(b)	3	2	M1 for isolating terms in g and constant terms A1 cao
	(c)	32	2	M1 for multiplying both sides by 4 or adding 3 to both sides or a full reverse number machine A1 cao

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Question		Answer	Mark	Notes
4	(a)	-9, -6, -3, 0, 3, (6), 9	2	B2 for all values correct (B1 for 3, 4 or 5 values correctly calculated)
	(b)	Line drawn	2	M1 (dep B1) plotting all their points correctly A1 correct line
5	(a)	7, 9	2	M1 for full method to find one term eg $6 \times 2 - 5$ or " 7 " $\times 2 - 5$ or one term correct A1 both terms correct
	(b)(i)	25	1	B1 cao
	(b)(ii)	$-6n + 61$	2	M1 for $-6n (+c)$ A1 for $-6n + 61$ oe
	(c)	21	2	M1 for substitution into the correct expression A1 cao
6	(a)	$2xy - 10x$	2	B2 (B1 for one correct term)
	(b)	$q^3 + 3q^2 - 4q$	3	M1 for at least one bracket correctly expanded A1 for addition of correct expansion of both brackets A1

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Question		Answer	Mark	Notes
7	(a)	22	2	M1 for 11 ($\times 2$) (may be seen on graph) A1
	(b)	15	1	B1
	(c)	1930 to 2000	2	B2 for 1930 to 2000 and reason, eg gradient of graph is greatest (B1 for 1930 to 2000)
8		Formula Equation Expression	2	B2 all correct answers (B1 for 1 or 2 correct answers)
9	(a)	Sketch	2	B2 for correct sketch, including symmetry and vertex at (0, 0) (B1 for parabola in correct orientation)
	(b)	Sketch	1	B1 for correct sketch

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Question		Answer	Mark	Notes
10	(a)	2	1	B1 cao
	(b)	$-2 < m \leq 2$	2	B2 cao (B1 for $-2 < m$ or $m \leq 2$) NB Accept the use of any letter other than m and ignore attempts to list integer values
	(c)	Correct diagram	2	B2 for correct diagram (must have full circle at -8 and empty circle at 2) (B1 for line from -8 to 2 without correct notation at each end or a line ending at either critical value with one end point correct and no contradiction)
	(d)	$w < -3$	2	M1 for isolating term in w or for critical value of -3 A1 $w < -3$
11	(a)	$a + b + p$	1	B1 for $a + b + p$ oe
	(b)	$4a + 5b + 7p$	2	M1 for $4a$ or $5b$ or $7p$ A1 $4a + 5b + 7p$ oe
12		Graph completed	1	B1 for line from $(1106, 6)$ to $(1136, 6)$

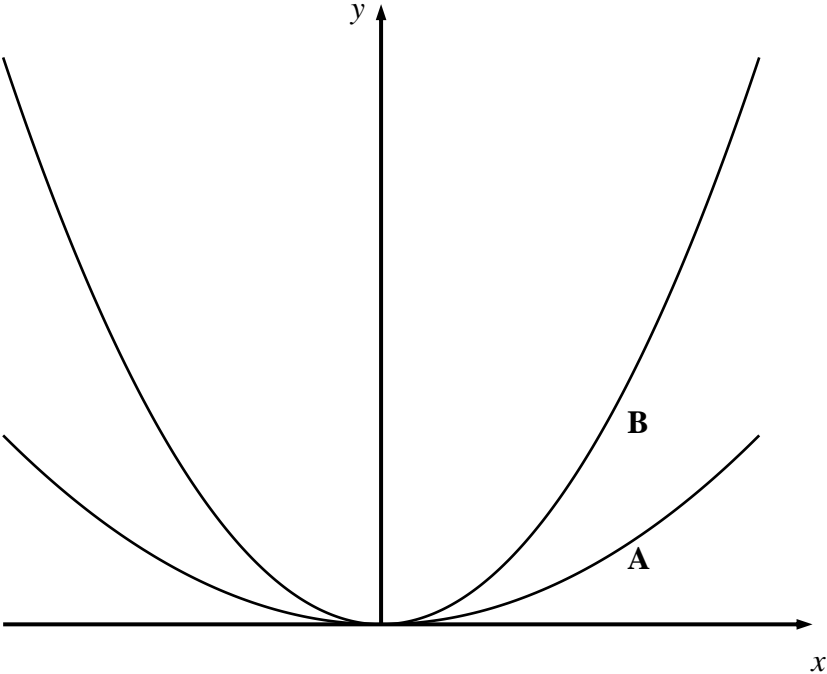
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Question		Answer	Mark	Notes
13	(a)(i)	49	2	M1 for substituting $m = 4$ A1
	(ii)	1	1	B1 cao
	(b)	$d = \frac{c+8}{5}$	2	M1 for a first step to rearrange A1 oe
	(c)(i)	125	1	B1 cao
	(ii)	2	1	B1 cao
14	(a)	1, (6.75), 10, (10.75), 9, (4.75)	2	B2 for all 3 missing values correct (B1 for 1 or 2 missing values correct)
	(b)	Curve drawn	2	M1 (dep B1) for plotting their points A1 for correct curve between $t = 0$ and $t = 2.5$
	(c)	6.75	1	B1 for value between 6.4 and 7 or ft from their quadratic graph (dep M1 in (b))
	(d)	0.6 to 0.7 and 2.1 to 2.2	2	M1 for using $h = 8$, may be shown on graph or one correct value A1 for one value between 0.6 and 0.7 and one value between 2.1 and 2.2 or ft their quadratic graph (dep M1 in (b))

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Question		Answer	Mark	Notes
14 Cont.	(e)	0.6 to 0.7 or 2.1 to 2.2	1	B1 ft (d)
15	(a)	$y = x$	1	B1 for $y = x$ oe
	(b)	$y = -x + 5$	2	M1 for using gradient of -1 , eg $y = -x + c$ oe or using intercept of 5, eg $y = mx + 5$ oe A1 $y = -x + 5$ oe
16	(a)	-12	3	M1 for expansion of both brackets (condone 1 error) M1 (dep M1) for collecting terms in y and constant terms A1 oe
	(b)	$-\frac{9}{2}$	3	M1 for correct first step M1 (dep M1) for isolating terms in w A1
17	(a)	$\frac{3}{2}$	2	M1 for correct method to find the gradient eg sight of right angled triangle with their height divided by their base using the given scales A1 for $\frac{3}{2}$ or $1\frac{1}{2}$ or 1.5
	(b)	interpretation	1	B1 for cost of parking per hour (in £, after one hour) oe

Question 9



Question 14(b)

