Mark Scheme (Results)

June 2021

Pearson Edexcel iLower Secondary
Year 9 Mathematics (LMA11)
Achievement Test

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General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme.

  Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.
- **Types of mark**
  - M marks: method marks
  - A marks: accuracy marks
  - B marks: unconditional accuracy marks (independent of M marks)
- **Abbreviations**
  - cao – correct answer only
  - ft – follow through
  - isw – ignore subsequent working
  - SC - special case
  - oe – or equivalent (and appropriate)
  - dep – dependent
  - indep – independent
  - awrt – answer which rounds to
  - eeoo – each error or omission

- **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.

- **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 it is clear from the working that the "correct" answer has been obtained from incorrect working, award 0 marks.
  If a candidate misreads a number from the question. Eg. Uses 252 instead of 255; method marks may be awarded provided the question has not been simplified. Examiners should send any instance of a suspected misread to review. If there is a choice of methods shown, mark the method that leads to the answer on the answer line; where no answer is given on the answer line, award the lowest mark from the methods shown.
  If there is no answer on the answer line then check the working for an obvious answer.

- **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: eg. 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 eg algebra.
  Transcription errors occur when candidates present a correct answer in working, and write it incorrectly on the answer line; mark the correct answer.

- **Parts of questions**

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

Year 9 iLower Secondary Mathematics

Section A

Question number	Answer	Mark
1	A is not the correct answer because they have subtracted 11f and 5y B is not the correct answer because they have subtracted 11f C is not the correct answer because they have subtracted 5y **The only correct answer is D - $25f - 2y$**	**(1)**

Question number	Answer	Mark
2	A is not the correct answer because x is greater than 90° **The only correct answer is B - Obtuse** C is not the correct answer because x is less than 180° D is not the correct answer because x is not 90°	**(1)**

Question number	Answer	Mark
3	A is not the correct answer because it is the mode B is not the correct answer because it is the median C is not the correct answer because it is the range **The only correct answer is D - 5.74**	**(1)**

Question number	Answer	Mark
4	A is not the correct answer because it says direct B is not the correct answer because is not a type of correlation **The only correct answer is C - Negative** D is not the correct answer because line of best fit does not go up	**(1)**

Question number	Answer	Mark
5	**The only correct answer is A - 8** B is not the correct answer because it is one sibling or less C is not the correct answer because it is one sibling or more D is not the correct answer because it is the number aged 13	**(1)**

Question number	Answer	Mark
6	A is not the correct answer because it is rounded down 3 sf B is not the correct answer because it is rounded up 3 sf C is not the correct answer because it is rounded down 3 dp **The only correct answer is D - 1.358**	**(1)**

Question number	Answer	Mark
7	A is not the correct answer because that is Sajni's share B is not the correct answer because they have divided by 4 **The only correct answer is C - $64** D is not the correct answer because that is Chhaya's share	**(1)**

Question number	Answer	Mark
8	A is not the correct answer because it is the second highest factor **The only correct answer is B - 6** C is not the correct answer because it is the lowest common multiple D is not the correct answer because it is 18 multiplied by 30	**(1)**

Question number	Answer	Mark
9	A is not the correct answer because $0.567 > 0.5454\ldots$ B is not the correct answer because $5/9 = 0.555\ldots > 0.5454\ldots$ C is not the correct answer because $57\% = 0.57 > 0.5454\ldots$ **The only correct answer is D - $^{6}/_{11}$ (0.5454…)**	**(1)**

Question number	Answer	Mark
10	A is not the correct answer because it is the probability of yellow B is not the correct answer because it is green over non-green **The only correct answer is C - $^{7}/_{18}$** D is not the correct answer because it is the probability of not green	**(1)**

Question number	Answer	Mark
11	A is not the correct answer because scale factor to get to A from B **The only correct answer is B - 1.5** C is not the correct answer because it is the difference in height D is not the correct answer because it is the difference in width	**(1)**

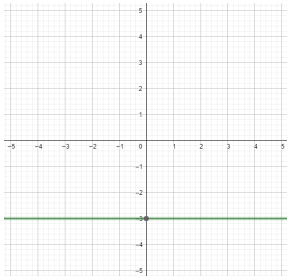
Question number	Answer	Mark
12	A is not the correct answer because they have subtracted $(3b+c)^2$ B is not the correct answer because square rooted and subtracted **The only correct answer is C - 71** D is not the correct answer because substituted 4 not -4	**(1)**

Question number	Answer	Mark
13	A is not the correct answer because they found 90% of the new price **The only correct answer is B - $900** C is not the correct answer because they added 10% of $990 D is not the correct answer because they found they have decreased	**(1)**

Question number	Answer	Mark
14	**The only correct answer is A - $^{37}/_{99}$** B is not the correct answer because this is 0.37 C is not the correct answer because its 0.37373737 (not recurring) D is not the correct answer because its 0.37373737 (not recurring)	**(1)**

Question number	Answer	Mark
15	A is not the correct answer because it is negative and the wrong sign B is not the correct answer because it is negative C is not the correct answer because it is the wrong sign **The only correct answer is D - $x > 2$**	**(1)**

Section B

Question number	Working	Answer	Additional guidance	Mark
16a		Graph drawn	B1	**(1)**

Question number	Working	Answer	Additional guidance	Mark
16b		(0, -1)	B1	**(1)**

Question number	Working	Answer	Additional guidance	Mark
16c	((−6 + 2) ÷ 2, (5 + 12) ÷ 2) (−4 ÷ 2, 17 ÷ 2)	(−2, 8.5)	M1 for correct method or for one correct value A1	**(2)**

Question number	Working	Answer	Additional guidance	Mark
17a	$12 + 24 \div (8 - 5)$ $12 + 24 \div 3$ $12 + 8$	20	M1 for dividing 24 by '3' A1	**(2)**

Question number	Working	Answer	Additional guidance	Mark
17b	<table><tr><td></td><td>180</td></tr><tr><td>2</td><td>90</td></tr><tr><td>2</td><td>45</td></tr><tr><td>3</td><td>15</td></tr><tr><td>3</td><td>5</td></tr></table>	$2 \times 2 \times 3 \times 3 \times 5$	M1 for correct method with no more than one error OR for correct prime factors but not written as a product A1	**(2)**

Question number	Working	Answer	Additional guidance	Mark
17c		$8n + 1$	M1 for $8n + k$ where $k \neq 1$ A1	**(2)**

Question number	Working	Answer	Additional guidance	Mark
18a	13 – (9-6) = 13 – 3 = 10 20 – 9 = 11	$^{10}/_{11}$	M1 for $^{10}/_{x}$ or $^{y}/_{11}$ (where x>10 and y<11) OR for 10 and 11 correctly identified but not written as a fraction A1	**(2)**

Question number	Working	Answer	Additional guidance	Mark
18b		Suitable straight line drawn	B1	**(1)**

Question number	Working	Answer	Additional guidance	Mark
18c		Answer in the range 50-60	B1 for answer in the range 50-60 OR for correct ft from their straight line of best fit	**(1)**

Question number	Working	Answer	Additional guidance	Mark
19a	$9k + 14 - 4(3k - 6)$ $9k + 14 - 12k + 24$ $-3k + 38$	$38 - 3k$	M1 for correct expansion with correct signs A1	**(2)**

Question number	Working	Answer	Additional guidance	Mark
19b	$(w + 4)(w - 5)$ $w^2 + 4w - 5w - 20$	$w^2 - w - 20$	M1 for three correct terms out of four terms with correct signs, or four correct terms regardless of signs A1	**(2)**

Question number	Working	Answer	Additional guidance	Mark
19c	$p^2 = \frac{7q}{5}$ $5p^2 = 7q$	$q = \frac{5p^2}{7}$	M1 for correctly squaring both sides M1 (dep) for multiplying both sides by 5 A1	**(3)**

Question number	Working	Answer	Additional guidance	Mark
19d	$7x + 1 = 5(2x + 5)$ $7x + 1 = 10x + 25$ $-25 + 1 = 10x - 7x$ $-24 = 3x$	$x = -8$	M1 for multiplying both sides by 5 correctly M1 (dep) for correctly isolating letter and number terms on each side A1	**(3)**

Question number	Working	Answer	Additional guidance	Mark
19e		1	B1	**(1)**

Question number	Working	Answer	Additional guidance	Mark
19f	$\frac{z^7}{z^2}$	z^5	M1 for any correct first step to simplify using index laws A1	**(2)**

Question number	Working	Answer	Additional guidance	Mark
20a		Chord	B1	**(1)**

Question number	Working	Answer	Additional guidance	Mark
20bi	$(\pi \times 6^2) \div 2$	56.5 – 56.6	M1 for correct method A1for 18π oe	**(2)**
20bii	$((\pi \times 12) \div 2) + 12$	30.8 – 30.9	M1 for correct method A1for $6\pi + 12$ oe	**(2)**

Question number	Working	Answer	Additional guidance	Mark
21	eg. 2.25×36	81	M1 for correct method A1	**(2)**

Question number	Working	Answer	Additional guidance	Mark
22	$(360 – (40 + 120)) \div 2$	100	M1 for correct method A1	**(2)**

Question number	Working	Answer	Additional guidance	Mark
23	145 × 3 = 435 155 × 9 = 1395 165 × 7 = 1155 175 × 1 = 175 435 + 1395 + 1155 + 175 = 3160 3160 ÷ 20	158	M1 for f × *h* (where *h* is a consistent point in each class interval) – can be implied by at least 3 correct products M1 (dep) for 'Σfh' ÷ 'Σf' A1	**(3)**

Question number	Working	Answer	Additional guidance	Mark
24		750 000 000 850 000 000	B1 B1	**(2)**

Question number	Working	Answer	Additional guidance	Mark
25a	$\frac{(20.46-16.50)}{16.50} \times 100$	24	M1 for correct method A1	**(2)**

Question number	Working	Answer	Additional guidance	Mark
25b	BB: 17.50 × 1.16 = 20.30 CB: 25.35 × 0.80 = 20.28	Clifton Bookstore	M1 correct method to calculate at least one percentage change M1 correct methods to find both percentage changes A1 correct decision supported by correct values (20.30 & 20.28)	**(3)**

Question number	Working	Answer	Additional guidance	Mark
26	$DE^2 + 8^2 = 21^2$ $DE^2 + 64 = 441$ $DE^2 = 441 - 64$ $DE^2 = 377$ $DE = \sqrt{377}$	19.4 (1648…)	M1 forms a correct equation using Pythagoras M1 for $\sqrt{(21^2 - 8^2)}$ A1 accept $\sqrt{377}$	**(3)**

Question number	Working	Answer	Additional guidance	Mark
27		Bisector drawn	B1 correct pair of intersecting arcs B1 correct bisector	**(2)**

Question number	Working	Answer	Additional guidance	Mark
28	73000 + 2900 = 75900	7.59×10^4	M1 for correct method OR for answer of 75 900 oe A1 cao	**(2)**

Question number	Working	Answer	Additional guidance	Mark
29	Current Total = 310 (needs to be 384) Current Mean = 31 (needs to be 32) Current Range = 21 (to be 26)	26 & 48	M1 for showing the range increases from 21 to 26 M1 for using mean to show that the total age increases from 310 to 384 A1	**(3)**

Question number	Working	Answer	Additional guidance	Mark
30	1 + 1 + 6 + 6 = 14 and 1 × 6 = 6 6 / 2 = 3 2 + 2 + 5 + 5 = 14 and 2 × 5 = 10 10 / 2 = 5 3 + 3 + 4 + 4 = 14 and 3 × 4 = 12 12 / 2 =6	6	M1 for any correct area M1 for the correct area A1 correct answer supported by correct working	**(3)**

Question number	Working	Answer	Additional guidance	Mark
31	$10 \div 2 = 5$ tan 70 = height ÷ 5 height = 5 tan 70 = 13.7373871…	13.7 – 13.8	M1 for selecting tan M1 for tan 70 = h / 5 or better A1 for answer in the range 13.7 – 13.8 that comes from correct working	**(3)**

Question number	Working	Answer	Additional guidance	Mark
32	(4:3) × 4 = 16:12 (4:1) × 3 = 12:3 16 : 12 : 3 16 + 12 + 3 = 31 12 ÷ (3 + 5) = 1.5 5 × 1.5 = 7.5 (7.5 ÷ 31) × 100 = 24.193548…	24.1 – 24.2	M1 for correct ratio connecting all 3 types of employee M1 (dep) for correct method to divide administrators into the ratio 3:5 A1 for answer in the range 24.1 – 24.2 that comes from correct working	**(3)**

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