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Mark Scheme (Results)

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Pearson Edexcel International GCSE Mathematics A (4MA0/1FR) Paper 1FR

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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
    - 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.
  Any case of suspected misread loses A (and B) marks on that part, but can gain the M marks.
  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 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.
  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 in another.

Apart from Question 16(b), where the mark scheme states otherwise, the correct answer, unless clearly obtained by an incorrect method, should be taken to imply a correct method.

Question	Working	Answer	Mark	Notes
1 (a)		2095	1	B1 Also accept 'Chennai'
(b)		two thousand and sixty one	1	B1 Accept 2 for 'two', and 1 for 'one' Condone omission of 'and'
(c)		tens	1	B1 Also accept, ten, 10, 60
(d)		1000	1	B1 cao
(e)		1407	1	B1 Also accept 'Mumbai'
				Total 5 marks

Question	Working	Answer	Mark	Notes
2 (a)		hexagon	1	B1
(b)		5	1	B1 cao
(c)		12	1	B1 cao
(d)		C F	2	B1 B1 for C, B1 for F
(e)		4 correct lines	2	B2 B1 for 2 correct & none wrong or for 3 correct & none or 1 wrong
(f))(i)		G	1	B1 cao
(ii)		E	1	B1 cao
(g)		D H	1	B1 Accept H D
(h)		eg Angles not all equal	1	B1
				Total 11 marks

Question	Working	Answer	Mark	Notes
3 (a)		5	1	B1 cao
(b)		Athletics	1	B1 Accept any clear identification
(c)		8.5 < bar < 9.5	1	B1
(d)	2 × 12 or 24 or 12 ÷ 3 or 4		2	M1
		8		A1 cao
				Total 5 marks

Question	Working	Answer	Mark	Notes
4 (a)		165	1	B1 cao
(b)	219 ÷ 3		2	M1
		73		A1 cao
(c)	$d = 3w$	$d = 3w$	2	B2 B1 for d = linear expression in w B1 for $3w$ oe ***SC:*** B1 for $w = \frac{d}{3}$ oe
				Total 5 marks

Question	Working	Answer	Mark	Notes
5 (a)		0.8	1	B1 Also accept .8, 0.80 etc
(b)		5	1	B1 cao
(c)		5.7	1	B1 cao
				Total 3 marks

Question	Working	Answer	Mark	Notes
6 (a)		41 45	2	B2 B1 for 41 B1 for 45
(b)		eg Add 4	1	B1
(c)		1	1	B1 cao
				Total 4 marks

Question	Working	Answer	Mark	Notes
7 (a)	$\frac{36}{100}$		2	M1 for $\frac{36}{100}$ or $\frac{18}{50}$
		$\frac{9}{25}$		A1 cao
(b)		0.07	1	B1 Also accept .07
(c)	eg $\frac{24}{100} \times 83$ or $\frac{24}{100} \times 83\,000\,000$		2	M1
		20		A1 Also accept 19.92, 19.9
				Total 5 marks

Question	Working	Answer	Mark	Notes
8		$2c + d$	2	B2 B1 for $2c$ B1 for $+ d$ or $+ 1d$
				Total 2 marks

Question	Working	Answer	Mark	Notes
9 (a)		4	2	B2 B1 for 1-5 1 to 5 1,5 etc
(b)	$\frac{25}{2}$ or $12\frac{1}{2}$ or $\frac{25+1}{2}$ or 13 or clear attempt to list all numbers of goals in order		2	M1
		2		A1 cao
(c)	$1 \times 6 + 2 \times 8 + 3 \times 7 + 4 \times 3 + 5 \times 1$ or 6 + 16 + 21 + 12 + 5 or 60		3	M1 for at least 4 correct products stated or evaluated
	"60" ÷ 25			M1 dep
		2.4 oe		A1 Also accept 2 if **both** method marks are scored
				Total 7 marks

Question	Working	Answer	Mark	Notes
10	eg 0.36, 0.333…, 0.375, 0.35		2	B2 for $\frac{1}{3}$ $\frac{7}{20}$ $\frac{9}{25}$ $\frac{3}{8}$ or for correct decimal equivalents or for correct fraction equivalents B1 for 3 fractions in correct order or for 2 fractions correctly converted to decimals (at least 2 dp rounded or truncated for $\frac{1}{3}$) or for 2 fractions expressed as equivalent fractions with a denominator of 300) **SC**: B1 for $\frac{3}{8}$ $\frac{9}{25}$ $\frac{7}{20}$ $\frac{1}{3}$ ie fractions reversed
		$\frac{1}{3}$ $\frac{7}{20}$ $\frac{9}{25}$ $\frac{3}{8}$		
				Total 2 marks

Question	Working	Answer	Mark	Notes
11	$\angle ABD = 60°$ or $\angle CBD = 71°$		2	M1 May be stated, appear in working or be marked on diagram
		131		A1
				Total 2 marks

Question	Working	Answer	Mark	Notes
12 (a)		7.8	1	B1 cao
(b)(i)		132.651	1	B1 Also accept 132.65
(ii)		132.7	1	B1 ft from their (i) if > 2 dp
(c)		3.7	1	B1 cao
				Total 4 marks

Question	Working	Answer	Mark	Notes
13 (a)(i)		0	1	B1 Also accept $\frac{0}{1}$, $\frac{0}{10}$
(ii)		$\frac{3}{10}$	2	M1 = denominator of 10 A1 = numerator of 3
(iii)	$\frac{4}{10}+\frac{2}{10}$ or 4 + 2 or 6		2	M1
		$\frac{6}{10}$ or $\frac{3}{5}$		A1
(b)	eg $\frac{4}{10}\times 200$		2	M1
		80		A1 cao
				Total 7 marks

Question	Working	Answer	Mark	Notes
14 (a)	64.8 × 48.6		3	M1
		3150		A2 A1 for 3149.28 or this value rounded or truncated to 4 or 5 sig figs ie 3149, 3149.2, 3149
(b)	$64.8^2 + 48.6^2$ or 4199.04 + 2361.96 or 6561		3	M1 for squaring and adding
	$\sqrt{64.8^2 + 48.6^2}$			M1 (dep) for square root
		81		A1
				Total 6 marks

Question	Working	Answer	Mark	Notes
15 (a)	$24 \times \frac{5}{3}$		2	M1 or 24 ÷ 3 (=8)
		40		A1 cao
(b)	$\frac{45}{5} \times 4$ oe		2	M1 or 45 ÷ (4 + 1) (=9)
		36		A1 cao
				Total 4 marks

Question	Working	Answer	Mark	Notes
16 (a)		$t(t + 6)$	2	B2 Also award B2 for $(t + 0)(t + 6)$ B1 for factors which, when expanded and simplified, give two terms, one of which is correct.
(b)	$7x - 5x = -4 + 5$ or $2x - 5 = -4$ or $7x = 5x + 1$ etc		3	M1 for correct rearrangement with x terms on one side and numbers on the other or for correct collection of either x terms or numbers on one side in a correct equation
	$2x = 1$			M1 Award also for $-2x = -1$
		$\frac{1}{2}$ oe		A1 Award all 3 marks if answer is correct and at least one method mark scored
(c)	$8y + 12 + 2y - 12$		2	M1 For 3 terms with correct signs or 4 terms without signs
		$10y$		A1 Also accept $10y + 0$
				Total 7 marks

Question		Working	Answer	Mark	Notes
17	(a)		36	1	B1 cao
	(b)	$7.2 \times \frac{2}{6}$ or $7.2 \div \frac{6}{2}$		2	M1
			2.4		A1 cao
	(c)	scale factor = $\frac{8}{2}$ or 4 or $\frac{2}{8}$ or $\frac{1}{4}$		3	M1 for $\frac{8}{2}$ or 4 or $\frac{2}{8}$ or $\frac{1}{4}$
		3.7×4 or $3.7 \div \frac{1}{4}$			M1 Also award for 3.7×3 or $3.7 \div \frac{1}{3}$ May be implied by 11.1
			14.8		A1 cao
					Total 6 marks

Question		Working	Answer	Mark	Notes
18	(a)	$\frac{12}{100} \times 675$ oe or 81		3	M1
		675 + "81"			M1 (dep) M2 for 675 × 1.12 oe
			756		A1 cao
	(b)	23% of amount = 2162 or $(1\% =) \frac{2162}{23}$ or 94 seen		3	M1 M2 for $\frac{2162}{23} \times 100$ oe
		"94" × 100 or 9400 or "94" × 77			M1
			7238		A1 cao
					Total 6 marks

Question	Working	Answer	Mark	Notes
19		2, 4	2	B2 -1 for eeoo
				Total 2 marks

Question	Working	Answer	Mark	Notes
20 (a)	eg $\frac{(5-2)\times 180}{5}$, $180-\frac{360}{5}$		2	M1 for (5 − 2) × 180 or 3 × 180 or 540
		108		A1 cao
(b)	$y=\frac{360}{6}$		2	M1
		60		A1 cao
				Total 4 marks

Question	Working	Answer	Mark	Notes
21 (a)		y^5	1	B1 cao
(b)	$4x + 12 > 8$ or $x + 3 > 2$		2	M1
		$x > -1$		A1
				Total 3 marks

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