



Mark Scheme (Results)

January 2018

Pearson Edexcel International GCSE
Mathematics A (4MA0)
Foundation Paper 1F

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If working is crossed out and still legible, then it should be given any appropriate marks, as long as it has not been replaced by alternative work.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

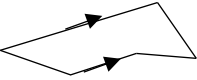
It is not appropriate to ignore subsequent work when the additional work essentially makes the answer incorrect eg algebra.

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**

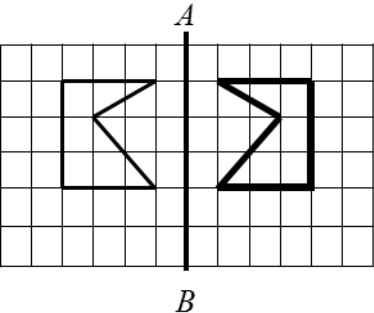
Unless allowed by the mark scheme, the marks allocated to one part of the question CANNOT be awarded in another.

International GCSE Maths (4MA0_1F)				
Question	Working	Answer	Mark	Notes
1 (a)		Forty six thousand, two hundred and seven	1	B1 Must be all words
(b)		3000	1	B1 3 thousand
(c)		823	1	B1
(d)		36	1	B1
(e)		17	1	B1
(f)		0.4375	1	B1
(g)		3 squares shaded	1	B1
2 (a)(i)		(5, 2)	1	B1
(ii)		(1, -1)	1	B1
(b)		Trapezium	1	B1
(c)	$\frac{4+0}{2}$ or $\frac{-1+2}{2}$ oe	(2, 0.5)	2	M1 For a correct method to find either coordinate, or one coordinate correct or for (0.5, 2) A1 Both coordinates correct

Question		Working	Answer	Mark	Notes
3	(a)		Miss Khan & Miss Dhesi	1	B1
	(b)		Correct bar	1	B1 Bar drawn greater than 27.5 and smaller than 30 N.B. shading not needed
	(c)		Mrs Chadha	1	B1
4	(a)		reflex	1	B1
	(b)		55	1	B1
			Parallel lines marked	1	B1
5	(a)		65	1	B1
	(b)		461	1	B1
6	(a)		grams	1	B1 Allow g
	(b)		metres	1	B1 Allow m
	(c)		3900	1	B1

Question	Working	Answer	Mark	Notes
7 (a)		14.325	1	B1
(b)		28	1	B1
(c)		1.9	1	B1
(d)		0.00605, 0.0062, 0.0601, 0.063, 0.63	1	B1 All decimals in correct order
8 (a)		14	1	B1
(b)		12	1	B1
(c)		36	1	B1
(d)		$2cd$	1	B1
(e)		$14x^2$	1	B1
(f)		$6m + 15$	1	B1

Question	Working	Answer	Mark	Notes
9	$0.3 \times 160 (= 48)$ $\frac{3}{8} \times 160 (= 60)$ $160 - "48" - "60"$ Alternative $0.3 + 0.375 (= 0.675)$ or $(30\% + 37.5\% (= 67.5\%))$ $1 - "0.675" (0.325)$ or $100 - 67.5 (= 32.5(\%))$ or $0.675 \times 160 (= 108)$ "0.325" $\times$ 160 or $160 - "108"$	52 52	4	M1 Correct method to find number of chocolate M1 Correct method to find number of lemon M1 dep on M2 a fully correct method to find number of blueberry A1 M1 Correctly writing chocolate and lemon cupcakes amounts as decimals or percentages or fractions with a common denominator M1 implies the previous M1 M1 dep on M2 a fully correct method to find number of blueberry A1

Question	Working	Answer	Mark	Notes
10 (a)			1	B1 NB shading is not necessary
(b)		3	1	B1
11 (a)		38	1	B1
(b)(i)		142	1	B1
(ii)		The <u>angles</u> on a straight <u>line</u> add up to 180°	1	B1 dep on seeing correct answer or correct method in (bi) accept <u>angles</u> around a <u>point</u> (accept circle) add up to 360° or vertically <u>opposite angles</u>
(c)	0.5×142 or $0.5 \times (180 - 38)$	71	2	M1 for a fully correct method to find angle z A1 ft $\frac{1}{2} \times$ 'angle y ' from (b)(i)

Question	Working	Answer	Mark	Notes
12 (a)		9^6	1	B1
(b)		23	1	B1
(c)		27	1	B1
(d)		62.5	1	B1
13 (a)		43 200	1	B1
(b)		12.8(0)	1	B1
14 (a)		1	1	B1
(b)		0.7	1	B1
(c)	0.3×150	45	2	M1 0.3×150 oe A1 NB An answer of $\frac{45}{150}$ oe scores M1 A0
15	E.g. $360 = 2 \times 180 = 2 \times 2 \times 90 = 2 \times 2 \times 2 \times 45$	$2 \times 2 \times 2 \times 3 \times 3 \times 5$ oe	2	M1 for at least 3 correct divisions or (1), 2, 2, 2, 3, 3, 5 A1 dep on M1

Question	Working	Answer	Mark	Notes
16 (a)		240	1	B1
(b)		80	1	B1
(c)	$\frac{40}{200}$	$\frac{1}{5}$	2	M1 for any correct fraction A1
(d)	$\frac{30}{200} \times 360$ oe or $360 \div 200 = 1.8$ and 1.8×30	54	2	M1 for a correct method to find angle for pink buttons A1
17 (a)	$1\,400\,000 \div 125\,000$ oe or $14 \div 125\,000$ or $14 \times 1000 \times 100 (= 1\,400\,000)$ or $125\,000 \div 1000 \div 100 (= 1.25)$	11.2	2	M1 for a first step; can be implied by an answer with digits 112 A1
(b)	$(4.8 \times 1000 \times 100) \div 19.2$ oe or $4.8 \div (19.2 \div 1000 \div 100)$ oe	25 000	2	M1 for division by 19.2; can be implied by an answer with digits 25 A1

Question	Working	Answer	Mark	Notes
18 (a)		2.2587(80006..)	2	M1 for 11.245 or 2.204 or 5.102087.. or 2.2587... rounded or truncated to 2 or more decimal places A1
(b)		2.3	1	B1ft ft from (a) as long as from at least 3sf
19 (a)	$(-7)^2 + 7 \times 5$ or $-7 \times -7 + 7 \times 5$ oe or 49	84	2	M1 for correct substitution or correct evaluation of $(-7)^2$ NB: accept 7(5) in place of 7×5 A1
(b)	$100 = 11^2 + 7q$ oe or $A - p^2 = 7q$ $100 = 11^2 + 7q$ oe or $-7 = 11^2 - 100$ oe	-3	3	M1 for correct substitution or rearrangement M1 isolating $7q$ in a correct equation A1 cao

Question	Working	Answer	Mark	Notes
20 (a)	$(80+1) \div 2 (= 40.5(\text{th}))$ or $80 \div 2 (= 40(\text{th}))$	4	2	M1 or listing numbers and attempt to find median A1
(b)	$1 \times 5, 2 \times 12, 3 \times 16, 4 \times 32, 5 \times 15$ or $5, 24, 48, 128, 75$ or 280 "280" $\div 80$	3.5 oe	3	M1 for at least 4 correct products – may be seen by side of table (products may not be evaluated); M1 dep Allow division by their $\sum f$ provided addition or total under column seen A1 condone rounding to 4 if 3.5 or $280 \div 80$ is present
(c)	$\frac{32}{80} + \frac{12}{80}$ or $\frac{32+12}{80}$	$\frac{44}{80}$	2	M1 or for $\frac{44}{n}$ where $n > 44$ or $\frac{m}{80}$ where $m < 80$ A1 for $\frac{44}{80}$ oe or 0.55 or 55%

Question	Working	Answer	Mark	Notes
21 (a)	$3 - 6y = 2y - 7$ or $1 - 2y = \frac{2y}{3} - \frac{7}{3}$ e.g. $-6y - 2y = -7 - 3$ or $3 + 7 = 2y + 6y$ or $-8y = -10$ or $8y = 10$	1.25 oe	3	M1 for multiplying out brackets in a correct equation or dividing all terms by 3 M1 for isolating the terms in y ft from $3 - 2y = 2y - 7$ or $1 - 6y = 2y - 7$ A1 dep on M1 awarded
(b)		$-3 < x \leq 4$	2	B2 also accept $x > -3$ and $x \leq 4$ or $4 \geq x > -3$ If not B2 then award B1 for a double-ended inequality which is correct at one end (ignore the other end) eg. $-3 < x < 4$, $-3 \leq x \leq 4$, $-3 < x > 4$ or for an answer of $x > -3$ oe or $x \leq 4$ oe or the wrong variable in an otherwise correct inequality eg. $-3 < y \leq 4$ SC : Award B1 for $-3 \leq x < 4$
(c)	e.g. $2m \geq 8 - 13$	$m \geq -2.5$ oe	2	M1 for isolating terms in m (in an equation or inequality) e.g. $2m \geq -5$ or -2.5 oe A1 must be an inequality

Question		Working	Answer	Mark	Notes	
22	(a)	$(QR^2 =) 10.6^2 - 5.9^2 (= 77.55)$ $(QR =) \sqrt{10.6^2 - 5.9^2}$ or $\sqrt{77.55}$	8.81	3	M1	for squaring and subtracting.
					M1	dep
					A1	for 8.806 – 8.81
	(b)	E.g. $\sin R = \frac{5.9}{10.6}$ or $\cos R = \frac{8.81}{10.6}$ or $\tan R = \frac{5.9}{8.81}$ E.g. $\sin^{-1}\left(\frac{5.9}{10.6}\right)$ or $\cos^{-1}\left(\frac{8.81}{10.6}\right)$ or $\tan^{-1}\left(\frac{5.9}{8.81}\right)$	33.8	3	M1	correct trig statement for angle PRQ or for angle QPR
					M1	complete method to find angle PRQ
					A1	for 33.8 – 33.82125
	(c)		12.45	1	B1	12.45 or 12.449 [•]

Question	Working	Answer	Mark	Notes
23	$(-2, 11)(-1, 8)(0, 5)(1, 2)$ $(2, -1)(3, -4)$	Correct line between $x = -2$ and $x = 3$	3	<p>B3 for a correct line between $x = -2$ and $x = 3$</p> <p>If not B3 then award B2 for a correct line through at least 3 of $(-2, 11) (-1, 8) (0, 5) (1, 2) (2, -1) (3, -4)$ OR for all of $(-2, 11) (-1, 8) (0, 5) (1, 2) (2, -1) (3, -4)$ plotted, not joined</p> <p>If not B2 then award B1 for for at least 2 correct points stated or calculated (may be in a table) OR for a line with a gradient of -3 OR for a line drawn with a negative gradient through $(0, 5)$ NB: No mark should be awarded for a line through $(0, 5)$ and $(3, 0)$</p>
24	<p>arc centre B cutting BA and BC at (say) P and Q AND arcs centres P and Q of equal radii which intersect at R (R must fall within guidelines) bisector drawn with all necessary arcs</p>		2	<p>M1</p> <p>A1 dep SC: B1 for bisector within guidelines with no arcs</p>