GCSE Mathematics (1MA1) – Foundation Tier Paper 2F

Mock Set 3 student-friendly mark scheme

Please note that this mark scheme is not the one used by examiners for making scripts. It is intended more as a guide to good practice, indicating where marks are given for correct answers. As such, it doesn't show follow-through marks (marks that are awarded despite errors being made) or special cases.

It should also be noted that for many questions, there may be alternative methods of finding correct solutions that are not shown here – they will be covered in the formal mark scheme.

NOTES ON MARKING PRINCIPLES

Guidance on the use of codes within this mark scheme
M1 – method mark. This mark is generally given for an appropriate method in the context of the question. This mark is given for showing your working and may be awarded even if working is incorrect. P1 – process mark. This mark is generally given for setting up an appropriate process to find a solution in the context of the question. A1 – accuracy mark. This mark is generally given for a correct answer following correct working. B1 – working mark. This mark is usually given when working and the answer cannot easily be separated. C1 – communication mark. This mark is given for explaining your answer or giving a conclusion in context supported by your working. Some questions require all working to be shown; in such questions, no marks will be given for an answer with no working (even if it is a correct answer).

Question 1 (Total 1 mark)

Part	Working or answer an examiner might expect to see	Mark	Notes
	40	B1	This mark is given for the correct answer only

Question 2 (Total 1 mark)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$(2 \times 2 \times 2 \times 2 =) 16$	B1	This mark is given for the correct answer only

Question 3 (Total 1 mark)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$\frac{1}{2}$	B1	This mark is given for the correct answer only

Question 4 (Total 1 mark)

Part	Working an or answer examiner might expect to see	Mark	Notes
	0.2	B1	This mark is given for the correct answer only

Question 5 (Total 3 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
(a)	2	B1	This mark is given for the correct answer only
(b)	Blue	B1	This mark is given for the correct answer only
(c)	10 : 6 = 3 : 1	B1	This mark is given for a correct ratio

Question 6 (Total 3 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
(a)	22	B1	This mark is given for the correct answer only
(b)	63 (= 7 × 9)	B1	This mark is given for the correct answer only
(c)	49 (= 7 × 7)	B1	This mark is given for the correct answer only

Question 7 (Total 3 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	(2 × 120) + (2 × 524) + 474 + 86 + 339 + 275	M1	This mark is given for a method to find the total weight of the items
	2676 g ÷ 1000	B1	This mark is given for changing g to kg
	2.676 kg	A1	This mark is given for the correct answer only

Question 8 (Total 3 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
(a)	23, 17, 11, 5…	M1	This mark is given for a method to find the number sin the sequence (subtracting 6 each time)
	–1	A1	This mark is given for the correct answer only
(b)	Yes; –100 is even whereas all the other numbers in the sequence are odd	B1	This mark is given for a correct statement, supported by calculations

Question 9 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$5000 \times \frac{3}{100} = 150$	M1	This mark is given for a method to find simple interest after one year
	150 + 150 = 300	A1	This mark is given for the correct answer only

Question 10 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$(5 + 10) \times 3 = 45$	B2	These marks are given for a correct answer (B1 is given for $(5 + 10) \times 3$ **or** 45 seen)

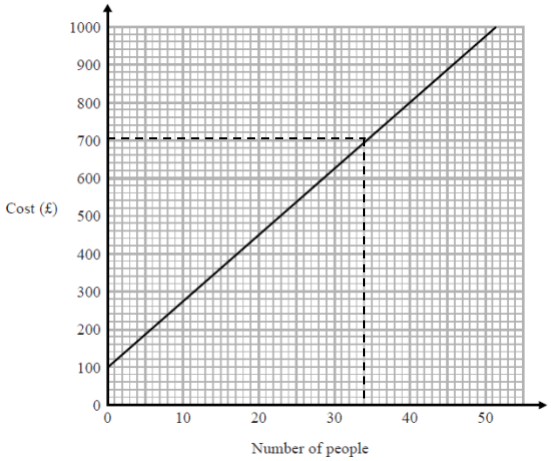
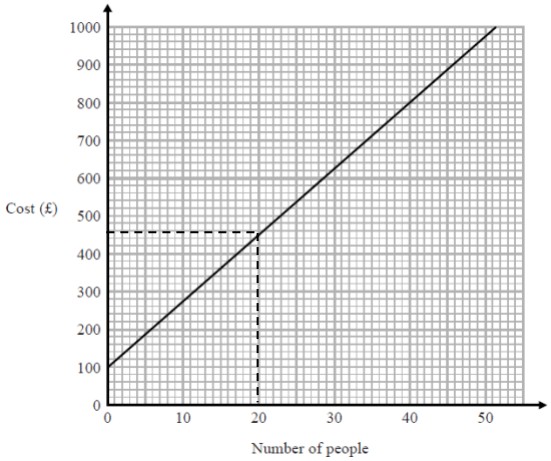
Question 11 (Total 4 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
(a)	5 kg = 5000 g	B1	This mark is given for using 1000 g = 1 kg
	$5000 \div 350 = 14.2857\ldots$	P1	This mark is given for a process to find the number of bags which can be filled
	14	A1	This mark is given for the correct answer only (the total number of full bags)
(b)	Yes, rice from two sacks would fill 28 bags	B1	This mark is given for a correct explanation

Question 12 (Total 4 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
(a)	$5 \times 1.25 + 32 = 38.25$	M1	This mark is given for a substitution
	38	A1	This mark is given for the correct (whole number) answer only
(b)	$(42 - 32) \div 1.25$	M1	This mark is given for a method to use an inverse operation
	8	A1	This mark is given for the correct answer only

Question 13 (Total 4 marks)

Part	Working an or answer examiner might expect to see	Mark	Notes
(a)	 34 people	B1	This mark is for reading 34 from the graph
(b)	 £450	B1	This mark is for reading 450 from the graph
(c)	(1000 – 100) ÷ 52	M1	This mark is given for a method to find out the cost for one extra person
	£17.31	A1	This mark is given for an answer in the range £17 – £18

Question 14 (Total 3 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
(a)	420 : 140 : 700	M1	This mark is given for a method to find the ratio in a unsimplified form
	Dividing through by 140 gives 3 : 1 : 5	A1	This mark is given for the correct answer only
(b)	1.5	B1	This mark is given for the correct answer only

Question 15 (Total 4 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	CBD = 180 – 110 = 70	M1	This mark is given for a method for find angle *CBD*
	Angles on a straight line add up to 180	C1	This mark is given for an appropriate supporting reason
	BDC = 180 – 70 – 70 = 40	M1	This mark is given for a method to find angle *BDC*
	Base angles of an isosceles triangle are equal Angles in a triangle add up to 180	C1	This mark is given for two appropriate supporting reasons

Question 16 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$\frac{3}{100} \times 150$	M1	This mark is given for a method to find the weight of the beans
	225	A1	This mark is given for the correct answer only

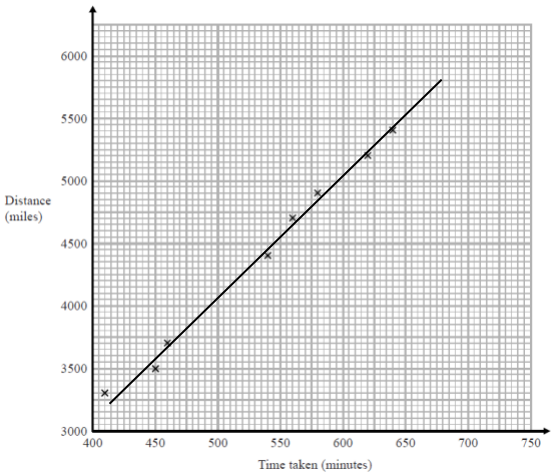
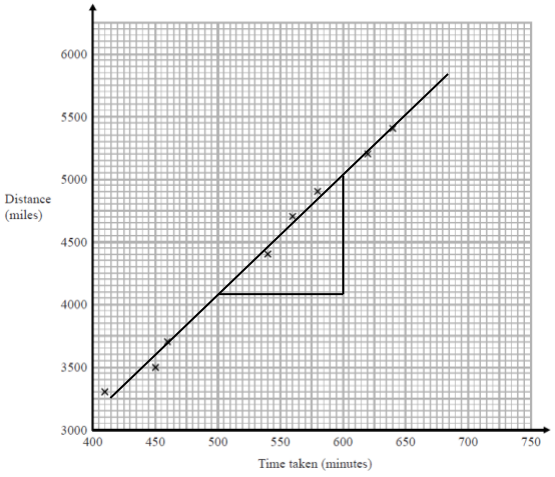
Question 17 (Total 3 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$\frac{120-80}{80} \times 100 = 50$	M1	This mark is given for a method to find the percentage increase of the population of Riddington
	$\frac{200-120}{200} \times 100 = 40$	M1	This mark is given for a method to find the percentage increase of the population of Greenwick
	The 50% percentage increase of the population of Riddington was greater than the 40% percentage increase of the population of Greenwick	C1	This mark is given for a correct statement, supported by correct calculations

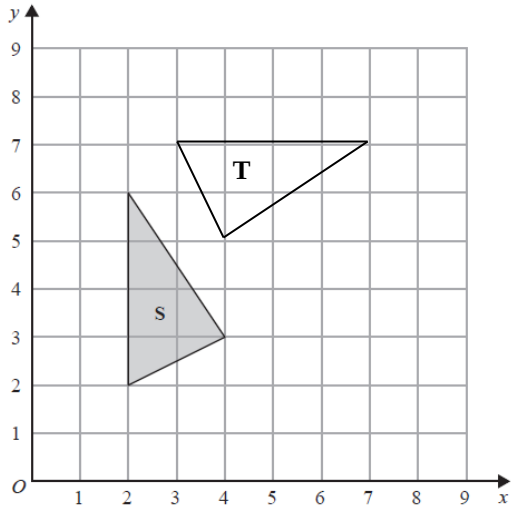
Question 18 (Total 4 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$\frac{70140}{140} = 501$	P1	This mark is given for a process to change 70140 Japanese Yen to Pounds
	$554 + 501 = 1055$	P1	This mark is given for a process to find the total cost of Andy's tickets
	$1860 \times 0.62 = 1153.20$	P1	This mark is given for a process to change 1860 Australian dollars to Pounds
	Leila pays more ($1153.20 > 1055$)	A1	This mark is given for a correct conclusion supported by working

Question 19 (Total 6 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
(a)(i)		B1	This mark is given for a line of best fit drawn on the scatter diagram
	490 minutes	B1	This mark is given for an answer in the range 480 – 500
(a)(ii)	Data is only a sample Line of best fit can vary Scale cannot be read exactly	C1	This mark is given for one of the possible reasons shown
(b)(i)		M1	This mark is given for a method to find the gradient of the line of best fit
	$\frac{5000-4050}{100} = 9.5$	A1	This mark is given for an answer in the range 9.4 – 9.8
(b)(ii)	Speed in miles per minute	C1	This mark is given for a correct interpretation of the line of best fit

Question 20 (Total 3 marks)

Part	Working an or answer examiner might expect to see	Mark	Notes
(a)		M1	This mark is given for the shape **T** drawn in the correct orientation
		A1	This mark is given for the shape **T** drawn in the correct orientation with coordinates (4, 5), (3, 7) and (7, 7)
(b)	Rotation of 90° anticlockwise with centre (5, 4)	B1	This mark is given for a correct description of the transformation

Question 21 (Total 5 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$2.5 \times 4x = 10x$ $7 \times (2x - 3) = 7(2x - 3)$	P1	This mark is given for a process to find an expression for the area of rectangle **A** and rectangle **B**
	$10x = 14x - 21$	P1	This mark is given for a process to form an equation for the two rectangles
	$4x = 21$	P1	This mark is given for a process to find the value of x
	$x = 5.25$	A1	This mark is given for a correct answer only
	Perimeter of **B** $= 2 \times ((2 \times 5.25 - 3) + 7)$ $= 2 \times 14.5$ $= 29$	B1	This mark is given for substituting to find a value for the perimeter of rectangle **B**

Question 22 (Total 4 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
(a)	First spin: $\frac{3}{4}, \frac{1}{4}$ Second spin: $\frac{3}{4}, \frac{1}{4}, \frac{3}{4}, \frac{1}{4}$	B2	This mark are given for finding all six probabilities correctly (B1 given for finding four of the probabilities correctly)
(b)	$\frac{3}{4} \times \frac{1}{4}$	M1	This mark is given for finding a method to work out the combined probability
	$\frac{3}{16}$	A1	This mark is given for the correct answer only

Question 23 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$S = \pi 2\,(10_2 - 8_2)$	M1	This mark is given for substituting
	$= (3.142)_2 \times 36$ $= 355$	A1	This mark is given for the correct answer to 3 significant figures

Question 24 (Total 4 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
(a)	$\frac{4}{4+3} = \frac{4}{7}$	B1	This mark is given for the correct answer only
(b)	$\frac{5}{5+3} = \frac{5}{8}$	P1	This mark is given for a process to find the fraction of large vans
	$\frac{4}{7} \times \frac{5}{8}$	P1	This mark is given for a process to multiply fractions
	$\frac{20}{56}$	A1	This mark is given for the correct answer only

Question 25 (Total 3 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$(11 \times 3) + (13 \times 8) + (15 \times 14) + (17 \times 4) + (19 \times 1) = 435$	M1	This mark is given for finding *fx* using midpoints
	$435 \div 30$	M1	This mark is given for finding the total divided by the number of days
	14.5	A1	This mark is given for the correct answer only

Question 26 (Total 5 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	Using Pythagoras, $r^2 + r^2 = 8^2$	P1	This mark is given for a process to find the radius of the circle
	$2r^2 = 64$ $r^2 = 32$	P1	This mark is given for finding an expression for the radius of the circle
	Area of circle = $\pi r^2 = 32\pi$	P1	This mark is given for a process to find the area of the circle
	$32\pi - 64$	P1	This mark is given for a complete process to find the shaded area
	36.5	A1	This mark is given for the correct answer to 3 significant figures