Mark Scheme

Mock Set 3

Pearson Edexcel GCSE Mathematics (1MA1)
Foundation Tier (Calculator)
Paper 2F

edexcel

Edexcel and BTEC Qualifications

Edexcel and BTEC qualifications are awarded by Pearson, the UK's largest awarding body. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers. For further information visit our qualifications websites at www.edexcel.com or www.btec.co.uk. Alternatively, you can get in touch with us using the details on our contact us page at www.edexcel.com/contactus.

Pearson: helping people progress, everywhere

Pearson aspires to be the world's leading learning company. Our aim is to help everyone progress in their lives through education. We believe in every kind of learning, for all kinds of people, wherever they are in the world. We've been involved in education for over 150 years, and by working across 70 countries, in 100 languages, we have built an international reputation for our commitment to high standards and raising achievement through innovation in education. Find out more about how we can help you and your students at: www.pearson.com/uk

General marking guidance

These notes offer general guidance, but the specific notes for examiners appertaining to individual questions take precedence.

1   All candidates must receive the same treatment. Examiners must mark the last candidate in exactly the same way as they mark the first.

Where some judgement is required, mark schemes will provide the principles by which marks will be awarded; exemplification/indicative content will not be exhaustive. When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the response should be sent to review.

2   All the marks on the mark scheme are designed to be awarded; mark schemes should be applied positively. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme. If there is a wrong answer (or no 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.

Questions where working is not required: In general, the correct answer should be given full marks.
Questions that specifically require working: In general, candidates who do not show working on this type of question will get no marks – full details will be given in the mark scheme for each individual question.

3   **Crossed out work**
This should be marked **unless** the candidate has replaced it with an alternative response.

4   **Choice of method**
If there is a choice of methods shown, mark the method that leads to the answer given on the answer line.

If no answer appears on the answer line, mark both methods **then award the lower number of marks.**

5   **Incorrect method**
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 for your Team Leader to check.

6   Follow through marks

Follow through marks which involve a single stage calculation can be awarded without working as you can check the answer, 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.

7   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 or its context. (eg an incorrectly cancelled fraction when the unsimplified fraction would gain full marks).
 It is not appropriate to ignore subsequent work when the additional work essentially makes the answer incorrect (eg incorrect algebraic simplification).

8   Probability

Probability answers must be given as a fraction, percentage or decimal. If a candidate gives a decimal equivalent to a probability, this should be written to at least 2 decimal places (unless tenths).

Incorrect notation should lose the accuracy marks, but be awarded any implied method marks.

If a probability answer is given on the answer line using both incorrect and correct notation, award the marks.

If a probability fraction is given then cancelled incorrectly, ignore the incorrectly cancelled answer.

9   Linear equations

Unless indicated otherwise in the mark scheme, full marks can be gained if the solution alone is given on the answer line, or otherwise unambiguously identified in working (without contradiction elsewhere). Where the correct solution only is shown substituted, but not identified as the solution, the accuracy mark is lost but any method marks can be awarded (embedded answers).

10   Range of answers

Unless otherwise stated, when an answer is given as a range (e.g 3.5 – 4.2) then this is inclusive of the end points (e.g 3.5, 4.2) and all numbers within the range.

Guidance on the use of abbreviations within this mark scheme

M   method mark awarded for a correct method or partial method

P   process mark awarded for a correct process as part of a problem solving question

A   accuracy mark (awarded after a correct method or process; if no method or process is seen then full marks for the question are implied but see individual mark schemes for more details)

C   communication mark

B   unconditional accuracy mark (no method needed)

oe   or equivalent

cao   correct answer only

ft   follow through (when appropriate as per mark scheme)

sc   special case

dep   dependent (on a previous mark)

indep independent

awrt answer which rounds to

isw   ignore subsequent working

Foundation tier Paper 2F (Calculator): Mock (Set 3) Mark Scheme

Question	Working	Answer	Mark	Notes
1		40	B1	cao
2		16	B1	cao
3		$\dfrac{1}{2}$	B1	oe (accept 0.45 – 0.55)
4		0.2	B1	cao
5 (a)		2	B1	cao
(b)		blue	B1	for blue or ft from table
(c)		3 : 1	B1	for 3 : 1 oe
6 (a)		22	B1	cao
(b)		63	B1	cao
(c)		49	B1	cao

Question	Working	Answer	Mark	Notes
7		2.676	M1	for method to find total weight of at least 4 items, e.g. 2 × 120 + 2 × 524 + 474 + 86 + 214 + 339 + 275
			B1	for change in units, e.g. 2676 ÷ 1000
			A1	cao
8 (a)		−1	M1	for method to find the number, e.g. subtracting 6 repeatedly, 17, 11,…
			A1	cao
(b)		Yes (supported)	B1	Yes, with explanation, e.g. (−)100 is even but all other numbers are odd oe
9		300	M1	for method to calculate 3% or 6%, e.g. $\dfrac{3}{100}$ × 5000 or 5300 or 4700 as answer
			A1	cao
10		(5 + 10) × 3 = 45	B2	for (5 + 10) × 3 = 45
			[B1]	[for (5 + 10) × 3 oe or for 45]
11 (a)		14	B1	for use of 1000 g = 1 kg
			P1	for process to find number of bags, e.g. 5000 ÷ 350 (= 14.2….)
			A1	cao
(b)		Yes (supported)	B1	for Yes, with explanation, e.g. will fill 28 bags, ft from (a)

Question	Working	Answer	Mark	Notes
12 (a)		38 or 39	M1	for substitution, e.g. 5 × 1.25 + 32 (= 38.25)
			A1	for 38 or 39
(b)		8	M1	for use of inverse operations, e.g. (42 – 32) ÷ 1.25
				or presentation as an equation e.g. $1.25 \times x + 32 = 42$
			A1	cao
13 (a)		34	B1	cao
(b)		450	B1	for 440 – 460
(c)		17.50	M1	for method to find cost for one guest, e.g. (1000 – 100) ÷ 50
			A1	for ans in the range 17 – 18; accept 17.5
14 (a)		3 : 1 : 5	M1	for ratio in unsimplified form, e.g. 420 : 140 : 700
			A1	cao
(b)		1.5	B1	for 1.5 or $1\frac{1}{2}$ or $\frac{3}{2}$

Question	Working	Answer	Mark	Notes
15		Shown, with reasons	M1	for method to find angle *CBD*, 180 – 110 (= 70)
			M1	for full method e.g. 180 – 70 – 70 (= 40)
			C1	for one appropriate reason
			C1	for complete set of appropriate reasons and *BDC* shown as 40 eg <u>Angles</u> on a straight <u>line</u> add up to 180 Base angles of an <u>isosceles triangle</u> are equal. <u>Angles</u> in a <u>triangle</u> add up to 180
16		225	M1	for method to find weight of beans, e.g. $\frac{3}{2} \times 150$
			A1	cao
17		Shown, from correct figures	M1	for method to find % increase or % decrease, e.g. $\frac{120 - 80}{80} \times 100 \; (= 50)$ or $\frac{200 - 120}{200} \times 100 \; (= 40)$
			M1	for complete method, e.g. $\frac{120 - 80}{80} \times 100$ and $\frac{200 - 120}{200} \times 100$
			C1	for 50% and 40%/less than 50% leading to correct conclusion

Question	Working	Answer	Mark	Notes
18		Leila from correct figures	P1	for process to change 70 140 Yen e.g. to £ by 70 140 ÷ 140 (= 501)
			P1	for complete process to find total cost of Andy's tickets, e.g. 70 140 ÷ 140 + 554 (= 1055)
			P1	for process to change 1860 dollars to £, e.g. 1860 × 0.62 (= 1153.2) or a method to change Andy's cost to dollars
			A1	for Leila with comparative figures of 1055 and 1153.2(0) [or 1701.61 dollars; or 147700 & 161448 Yen]
19 (a)(i)		480 – 500	B1	for line of best that can be used to estimate time of flight
			B1	for 480 – 500 or ft lobf
(a)(ii)		reason	C1	for reason, e.g. lobf can vary, data is only a sample, scale cannot be read exactly
(b)(i)		9.4 – 9.8	M1	for method to find gradient, e.g. triangle drawn with "change in distance ÷ change in time"
			A1	for 9.4 – 9.8 or ft lobf
(b)(ii)		speed	C1	for speed (in miles per minute) oe
20 (a)		Shape drawn	M1	shape drawn in correct orientation at (4, 5) (3, 7) (7, 7)
			A1	cao
(b)		description	B1	ft for rotation, 90° anticlockwise, centre (5, 4) oe

Question	Working	Answer	Mark	Notes
21		29	P1	for process of forming an expression for one area, egg $2.5 \times 4x$, $7(2x - 3)$
			P1	for process of forming an equation, e.g. $10x = 7(2x - 3)$ or $10x = 14x - 21$
			P1	for complete process to solve the equation to find the value of $4x$ or the value of x
			A1	for $4x = 21$ or $x = 5.25$ oe
			B1	ft using found value of x or $4x$ in perimeter of **B**: $4x + 8$
22 (a)		$\dfrac{3}{4}, \dfrac{1}{4}$ $\dfrac{3}{4}, \dfrac{1}{4}, \dfrac{3}{4}, \dfrac{1}{4}$	B1 B1	for correct probabilities for A or for B or for first spin all correct
(b)		$\dfrac{3}{16}$	M1	for process to find combined probability, e.g. $\dfrac{3}{4} \times \dfrac{1}{4}$
			A1	for $\dfrac{3}{16}$ oe, ft from diagram
23		355	M1	for substitution, e.g. $\pi^2(10^2 - 8^2)$
			A1	for 355 (accept 355.3…)

Question	Working	Answer	Mark	Notes
24 (a)		$\dfrac{4}{7}$	B1	for $\dfrac{4}{7}$ oe
(b)	$\dfrac{4}{7} \times \dfrac{5}{8}$	$\dfrac{20}{56}$	P1	for start to process e.g. $\dfrac{5}{8}$
			P1	for correct process to multiply fractions, e.g. $\dfrac{4}{7} \times \dfrac{5}{8}$
			A1	ft from (a), e.g. $\dfrac{5}{14}$, $\dfrac{20}{56}$, $\dfrac{1120}{3136}$
25		14.5	M1	for $f \times x$ using midpoints e.g. $11 \times 3 + 13 \times 8 + 15 \times 14 + 17 \times 4 + 19 \times 1$
			M1	(dep M1) for $\Sigma fx \div 30$
			A1	accept 14.4 to 14.5
26		36.5	P1	for process to form equation to determine the radius, Pythagoras or trigonometry, e.g. $r^2 + r^2 = 8^2$
			P1	for $r^2 = 32$ or $r = 8\cos 45°$ oe
			P1	(dep first P1) for process to find area of circle, e.g. $\pi \times 5.6^2$ dependant on first P1
			P1	for complete process to find shaded area, e.g. $32\pi - 8^2$
			A1	for 36.5 to 36.6