

Mark Scheme

Pearson Edexcel GCSE (9-1)
Mathematics – 1MA1
Trial of Specimen Papers (Set 1)

Paper 3 (1MA1/3F): Calculator
Foundation Tier

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

March 2016

All the material in this publication is copyright
© Pearson Education Ltd 2016

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 then mark both methods **as far as they are identical** and award these 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.

Mark scheme GCSE (9 – 1) Mathematics

Paper 1MA1_3F			
Question	Working	Answer	Notes
1		6000	B1 cao
2		5.25	B1 cao
3		8	B1 cao
4 (i)		12	B1 cao
(ii)		2 or 5	B1
5		1.75l or 1750 ml	B1 for knowledge of 1 litre is 1000 millilitres P1 for adding their two amounts C1 for 1.75l or 1750 ml (must include units)
6 (a)		8	B1 8 ± 2 mm
(b)		35	B1 $35 \pm 2^\circ$
7 (a)		5	B1 cao
(b)		12	B1 cao
(c)		d^5	B1
8		Statement	C1 for a full explanation
9		-16, 32	P1 for $48 \div 6$ P1 for a complete process to find either A or B A1

Paper 1MA1_3F			
Question	Working	Answer	Notes
10		38 15	B1 cao P1 $(47 - 2) \div 3$ A1 cao
11 (a) (b)		7	B1 cao
		256	B1 cao
12		Yes with evidence	C1 for writing down at least two squares numbers P1 for adding square numbers A1 cao with supporting evidence
13		- 4 and - 10	M1 for repeated subtraction of 6 oe A1 - 4 A1 - 10
14 (a) (b) (c)		Angle marked	B1 cao
		Face shaded	B1 cao
		12	B1 cao
15		2	P1 for correct process to find fibre for 400g OR to find weight of 1 slice P1 for a complete process to find the fibre per slice A1 cao
16 (i) (ii) (iii)		3 options shown	C1 Diagram with decreased perimeter drawn C1 Diagram with same perimeter drawn C1 Diagram with increased perimeter drawn

Paper 1MA1_3F			
Question	Working	Answer	Notes
17 (a)		70, 40 and 55	P1 for a method to find one of angles eg $(180 - 70) \div 2$ or 70 stated as the equal or $180 - 2 \times 70$ P1 for a method to find a angle A1 for 70, 40 and 55 (any order)
		Explanation	C1 Explanation eg cannot have two obtuse angles
18 (a)		1:1.5	M1 for 40 : $(100 - 40)$ oe or 1.5:1 A1 cao
		$\frac{3}{4}$	B1
19	$3.69 \times 2 = 7.38$	19	P1 for $50 \div 7.38$ or $50 \div 3.69$ (or repeated addition) P1 for $6 \times 7.38 + 3.69$ or “6” $\times 3 + 1$ A1 19 boxes
20		Venn diagram	M1 for two overlapping ovals M1 for only 2 and 6 in the intersection M1 for only 5 and 7 in the universal set only C1 for a fully correct Venn Diagram

Paper 1MA1 3F			
Question	Working	Answer	Notes
21		(4,10)	B1 cao
		Line drawn	B1 Straight line drawn passing between (2, 16) and (2, 28) AND (13, 80) and (13, 92)
		Positive	C1 positive OR description of dynamic relationship
		Value between 60 and 70	C1 a correct value given
		Statement	C1 for referring to the danger of extrapolation outside the given range or for a given point
22		$12.5 \leq L < 13.5$	B1 12.5 B1 13.5
23		$y = 2x + 1$	M1 for a complete method to find the gradient M1 for a method to find the c in $y = mx + c$ A1 $y = 2x + 1$
24	(720+408+304+252) ÷ 50 $1684 \div 50$	33.68	M1 for finding 4 products fw consistently within interval (including end points) M1 (dep on 1st M) for ' Σfw ' ÷ 50 A1 (accept 33.7 from correct working)
		Manager with reasons	M1 for strategy to compare number of small size sold to number ordered C1 clear comparison that small size is not $\frac{3}{4}$ and so Jenny is not correct or the manager is correct

Paper 1MA1_3F			
Question	Working	Answer	Notes
25 (a)	160 tiles 18 packs	18	M1 a full method to find the area of the trapezium M1 a full method to calculate both areas in consistent units M1 for the area of the trapezium ÷ area of a tile (with consistent units) M1 (dep previous M1) for method for number of packs required A1
	176 tiles 20 packs	Supported statement	P1 finding the number of packs for 10% more tiles or 10% of their number of packs, ft from (a) C1 Statement, eg. increase in packs is 2 more which is more than 10%
26		$(x - 1)(x + 4)$	M1 $(x \pm 1)(x \pm 4)$ A1 $(x - 1)(x + 4)$ oe
27		A and D	C1 in any order
28		1.0625	P1 for a complete process to find the density of liquid A, eg $\frac{19}{22} \times 1.1 (= 0.95)$ P1 for a complete process to find the mass of liquid C, eg $5 \times 0.95 + 15 \times 1.1$ P1 for a complete process to find the density of liquid C, eg $\frac{21.25}{20}$ A1 cao

