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Mark Scheme

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

Paper 1 (1MA1/1F): Non-Calculator
Foundation Tier

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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.

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

Paper 1MA1_1F			
Question	**Working**	**Answer**	**Notes**
1		5.3(0)	B1 cao
2		195	B1 cao
3		4.44	B1 cao
4		90	B1 cao
5		−27	B1 cao
6 (a)		5412	B2 (B1 for any 4-digit even number using 4,5,1,2 **or** 5421)
(b)		45, 54, 41, 14, 42, 24, 51, 15, 52, 25, 12, 21	P1 starts to list systematically; at least 6 correct seen (ignore repeats) A1 lists all 12 numbers (condone inclusion of **all** repeats 44, 55 etc)
7		chart	C1 for key or suitable labels to identify boys and girls C1 for 4 correct sport labels or a linear scale C1 for diagram or chart (combined or separate), correctly showing data for at least 3 sports C1 for fully correct diagram or chart with axes correctly scaled and labelled
8 (a)		example	C1 for appropriate example shown
(b)		example	C1 conclusion

Paper 1MA1_1F			
Question	**Working**	**Answer**	**Notes**
9		15561	M1 for complete method with relative place value correct (addition not necessary), allow 1 arithmetic error M1 (dep) for addition of all appropriate elements A1 cao
10		No (supported)	P1 starts the process to convert one dimension A1 converts at least one measurement correctly C1 conclusion eg No, since the 40 cm > 14 inches
11	(5) 3 (4) (12) 6 (7) 5 18 11 10 (9) (30)	table	C1 for at least 2 correct numbers C1 for at least 4 correct numbers C1 for completed table
12		1 : 3	M1 for stating a ratio eg 28 : 84 oe, or 3:1 A1 cao
13 (a)		drawing	C1 drawing of pattern number 4
(b)		42	C1 shows a process of working towards pattern number 20 C1 cao
(c)		$n + 2$	C1 begins process of stating algebraic expression eg n C1 $n + 2$ oe

Paper 1MA1_1F			
Question	**Working**	**Answer**	**Notes**
14 (a)		2000p-2600p	P1 evidence of estimate eg. 4 or 50 or 10 used in calculation P1 complete process to solve problem A1 2000p-2600p or £20-£26
(b)		under	C1 underestimate as values have been rounded down
15		no with evidence	P1 interprets the scale for 2 dimensions on diagram or in calculations. P1 a complete process to find comparative figures. C1 "no" with correct figures.
16		32	M1 for method to find area of any one rectangle A1 cao
17		rotation	M1 for triangle in correct orientation or rotation 90° anticlockwise A1 cao
18		125	P1 for process to find 7/20 of 500 (=175) or 7/20 + 4/10 (=3/4) or 40% of 500 P1 for complete process to find the number of children. A1 cao

Paper 1MA1_1F			
Question	**Working**	**Answer**	**Notes**
19 (a)			P1 method to find amount of milk needed, eg 7× ¾ (=5.25) P1 uses appropriate integer from their working to calculate a cost eg 5.25 as 6 pints and 3 × 2 pints
		2.79	A1 cao
(b)		pay more	C1 deduces he **may** have to pay more [if he uses more than 0.857 pints a day]
20		42	P1 process to start problem solving eg forms an appropriate equation P1 complete process to solve equation A1 cao
21		4 m^2	C1 substitution into formula eg $35 = \frac{140}{A}$ A1 4 stated C1 (indep) units stated
22		0.22	P1 begins process of subtraction of probabilities from 1 A1 oe
23		48	P1 begins to work with rectangle dimensions eg $l+w=7$ or $2\times l+w$ (=11) C1 shows a result for a dimension eg using $l=4$ or $w=3$ P1 begins process of finding total area eg 4 × "3" × "4" A1 cao

Paper 1MA1_1F					
Question	**Working**	**Answer**	**Notes**		
24		explanation	M1	works with volume eg 240000	begins working back eg 70÷2.50 (=28)
			M1	uses conversion 1 litre = 1000 cm^3	uses conversion 1 litre = 1000 cm^3
			M1	uses 8000 eg vol ÷ 8000 (=30)	uses 8000 eg "28"× 8000 (=224000)
			M1	uses "30" eg "30" × 2.50	works with vol. eg 224000
			C1	for explanation and 75 stated	for explanation with 240000 and 224000
25 (a)		Sharif	B1	Sharif with mention of greatest total throws	
(b)		Decision (supported)	P1	starts working with proportions	
			A1	Conclusion: correct for Paul, but not for the rest; or ref to just Paul's results	
			P1	selects Sharif or overall and multiplies P(heads)×P(heads) eg ¾ × ¾	
(c)	Tot: H 300 T 100	$\frac{9}{16}$	A1	oe	
26 (a)		$\frac{\sqrt{3}}{2}$	B1		
(b)		6	M1	starts process eg $\sin 30 = \frac{x}{12}$	
			A1	answer given	
27		x^2+2x-3	M1	starts expansion: at least 3 terms correct with signs, or four terms correct ignoring signs	
			A1	for x^2+2x-3	

Paper 1MA1_1F			
Question	**Working**	**Answer**	**Notes**
28		$(x+4)(x-4)$	B1 for $(x+4)(x-4)$
29		$x=7$, $y=-3$	M1 for correct process to eliminate one variable (condone one arithmetic error) M1 (dep) for substituting found value in one of the equations or appropriate method after starting again (condone one arithmetic error) A1 for both correct solutions

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