



Annual Examinations for Middle Schools 2023

YEAR 7	MATHEMATICS	MARKING SCHEME
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Notes for Marking of Scripts

Types of Marks

Method marks are awarded for knowing a correct method of solution and attempting to apply it. Method marks cannot be lost for arithmetic mistakes. They can only be awarded if the method used would have led to the correct answer had not an arithmetic mistake been made. Unless otherwise stated, any valid method not specified in the marking scheme is to be accepted and marked accordingly.

There are two types of Method marks, **M** marks and **(M)** marks.

- **M marks**, are only awarded if method is seen.
- **(M) marks** are awarded even when a correct answer is given and no work is shown.

There are two types of Accuracy marks, **A** marks and **B** marks.

- **A** marks are accuracy marks given for correct answer only (c.a.o.).
 - * Incorrect answers, even though nearly correct, score no marks.
 - * Accuracy marks are also awarded for incorrect answers which are correctly followed through (f.t.) from an incorrect previous answer, **provided that f.t. is indicated in the marking scheme**.
 - * No Method marks **M/(M)** or Accuracy marks **A** are awarded when a wrong method leads to a correct answer.
 - * When a question is assigned **M** and **A** marks and students present a correct answer without any working, only **A** marks are awarded.
- **B** marks are accuracy marks awarded for specific results or statements independent of the method used.

Misreading

Method marks can still be earned (unless that part of the question is trivialised) but the final Accuracy marks are lost.

Crossed out working

An answer or working that is crossed out and not replaced is marked as if it were not crossed out. If the answer or working is replaced, then the crossed out answer or working is ignored and should not be considered for marking.

Units

In general, missing or inaccurate units are not penalised unless otherwise indicated in the marking scheme.

Other

- Incorrect working or statement following a correct answer is ignored.
- Marks are not sub-divisible; no half marks may be awarded.
- Other abbreviations used:
 - * o.e. (or equivalent)
 - * e.e.o.o. (each error or omission)
- Markers are advised to indicate the M, (M), A or B marks awarded in the body of the script and then write their total in the margin. The total mark for each question should be written in the table included at the top of page 1 of the main paper. This measure facilitates the moderation of papers.

Non-Calculator Paper 25 marks

Quest.		Requirements	Mark		Additional Guidance
1	a)	10.1 10.3	B1 B1	4	
	b)	14.4 15.15	B1 B1		
2	a)	-2	B1	5	
	b)	$10 + 8 \times 5 \div 20$	(M)1		
		$10 + 2$ 12	(M)1 A1		
	c)	$\frac{8}{35}$	A1		
3	a)	Correct rounding Accept answers between 22 and 26	M1 A1	4	
	b)	Valid attempt at dividing 24	M1 A1		
4	a)	$14 + 13 = 27$	(M)1 A1	4	
	b)	$102 - 24 = 78$	(M)1 A1		
5		$24 + 9x - 24 = 69 - 24$ $9x = 45$ $\frac{9x}{9} = \frac{45}{9}$ $x = 5$	M1 (M)1 A1	3	
6	a)	15: 15, 30, 45, 60 20: 20, 40, 60 LCM = 60	M1 A1	5	
	b)	$\frac{10}{12} + \frac{7}{12} - \frac{3}{12}$ $\frac{14}{12}$ or $\frac{7}{6}$ $1\frac{1}{6}$	M1 M1 A1		

Main Paper 75 marks

Quest.		Requirements	Mark		Additional Guidance
1	a)	Three million four hundred and five thousand and seventy-eight	B1	5	Ignore spelling mistakes
	b)	115 763 placed first 115,763 116,573 116,753 151,763	B1 B1		All correct
	c)	$\frac{3}{20}$	B1		
	d)	0.74	B1		

2		<div><div>Next summer, I will go swimming.</div><div>Finding a prime number between 48 and 52.</div><div>Picking an even number from 102, 112, 124, 148.</div><div>Getting a head when tossing a coin.</div><div>The probability that the first person you meet was born in February.</div></div> <div><div>Evens</div><div>Impossible</div><div>Very Likely</div><div>Very Unlikely</div><div>Certain</div></div>		4																						
3		<table><tr><td></td><td colspan="3">Factors of 24</td><td colspan="3">Factors of 40</td></tr><tr><td>Odd</td><td colspan="3">3</td><td colspan="3">5</td></tr><tr><td>Even</td><td>6</td><td>12</td><td>24</td><td>10</td><td>20</td><td>40</td></tr></table>		Factors of 24			Factors of 40			Odd	3			5			Even	6	12	24	10	20	40	B3	3	−1 e.e.o.o.
	Factors of 24			Factors of 40																						
Odd	3			5																						
Even	6	12	24	10	20	40																				
4	a)	$\frac{6}{20} \times 100\%$ 30%	M1 A1	4																						
	b)	$\frac{3}{100} \times \text{€}775$ €23.25	M1 A1																							
5	a)	$5p - 2h - 9$	M1 A1	5	Any 2 correct terms All correct																					
	b)	i) $2x + y + 5z$ ii) $2(480) + 672 + 5(14.90)$ €1706.50	B1 M1 A1 ft																							
6	a)	i) 14:20 ii) 2:20 pm	B1 B1 ft	5																						
	b)	$300 + 33 = 333$ minutes	B1																							
	c)	$14:20 + 5 \text{ h } 33 \text{ min}$ 19:53	M1 A1 ft																							
7		$a = 51^\circ$ Alternate angles are equal	A1 M1	8																						
		$b = 51^\circ$ Corresponding angles are equal	A1 ft M1																							
		$c = 51^\circ$ Vertically opposite angles are equal	A1 ft M1																							
		$d = 129^\circ$ Angles on a straight line add up 180°	A1 M1																							
8	a)		B1	6	Ignore any difference in sizes of rectangles used																					
	b)	<table><tr><td>Pattern Number</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr><tr><td>Number of triangles</td><td>2</td><td>6</td><td>10</td><td>14</td><td>18</td><td>22</td></tr></table>	Pattern Number		1	2	3	4	5	6	Number of triangles	2	6	10	14	18	22	B1 B1 B1	For both 10 and 14 For 18 For 22							
Pattern Number	1	2	3		4	5	6																			
Number of triangles	2	6	10	14	18	22																				
	c)	Valid attempt to continue pattern 38 triangles	(M)1 A1																							
9	a)	i) Mode = 1 m ii) Median: 78, 80, 83, 86, 100, 100, 108, 149 93 cm	B1 M1 A1	7																						

		iii) Range: $149 - 78 = 71 \text{ cm}$	B1		
	b)	Mean = $\frac{784}{8}$ 98 cm No, because 4 nephews are taller	M1 M1 B1		For conversion and addition For division
10	a)	False	B1		
	b)	True	B1		
	c)	True	B1		
	d)	True	B1	7	
	e)	False	B1		
	f)	False	B1		
	g)	True	B1		
11	a)	Accurate side AB Accurate angle of 115° Accurate angle of 37° Correct labelling	A1 A1 A1 B1	6	$\pm 0.2 \text{ cm}$ $\pm 2^\circ$ $\pm 2^\circ$
	b)	a scalene	B1		
	c)	13.5 cm	B1		$\pm 0.2 \text{ cm}$
12	a)	$(-4, -8)$	B1		
	b)	Correct plotting of Point S	B1		
	c)	i) (1, 2) ii) (3, 6)	B1 B1	5	
	d)	$y = 7$	B1		
13	a)	i) $8 \times 8 = 64 \text{ cm}^2$ $\frac{12 \times 8}{2} = 48 \text{ cm}^2$ 112 cm ²	M1 M1 A1		Accept other valid methods
		ii) $\frac{112}{16} \times 30 = 210 \text{ ml}$ 210×2 420 ml	M1 M1 A1 ft	10	
	b)	$21 \times 7 \times 150 = 22\,050 \text{ cm}^3$ $21 \times 7 \times 150 = 22\,050 \text{ cm}^3$ $12 \times 9 \times 150 = 16\,200 \text{ cm}^3$ $22\,050 + 16\,200 + 22\,050$ $60\,300 \text{ cm}^3$	M1 M1 M1 A1		For both