



Annual Examinations for Middle Schools 2024

YEAR 8	MATHEMATICS	MARKING SCHEME
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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.

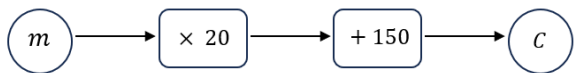
NON-CALCULATOR PAPER (20 marks)

Questions 1-10 (1 mark each) and questions 11-15 (2 marks each)

Que.	Requirements	Mark		Additional Guidance
1	72	B1	1	
2	15.16	B1	1	
3	20%	B1	1	
4	B) $100b^2$	B1	1	
5	8	B1	1	
6	-11	B1	1	
7	17 g	B1	1	
8	BK 80	B1	1	
9	22 kg	B1	1	
10	24 cm	B1	1	
11	$\frac{10}{14} + \frac{7}{14} = \frac{17}{14}$ $1\frac{3}{14}$	(M)1 A1	2	
12	$14 \div 7 + 6$ 8	(M)1 A1	2	
13	$\frac{7}{3} \times \frac{3}{14}$ $\frac{1}{2}$	(M)1 A1	2	
14	$1.63 - 1.26$ 0.37 m	(M)1 A1	2	
15	$-40 + 20$ -20	(M)1 A1	2	

MAIN PAPER (80 marks)

Que.		Requirements	Mark		Additional Guidance																																																		
1	a	$270 \div 1.20$ £225	M1 A1	6																																																			
	b	i) $21.4369 + 12.13$ 33.567	(M)1 A1																																																				
		ii) 0.01	(M)1 A1																																																				
2	a	<table border="1"><tr><td colspan="7">SPINNER A</td></tr><tr><td>x</td><td>1</td><td>3</td><td>5</td><td>6</td><td>8</td><td></td></tr><tr><td rowspan="5">SPINNER B</td><td>2</td><td>2</td><td>6</td><td>10</td><td>12</td><td>16</td><td></td></tr><tr><td>4</td><td>4</td><td>12</td><td>20</td><td>24</td><td>32</td><td></td></tr><tr><td>6</td><td>6</td><td>18</td><td>30</td><td>36</td><td>48</td><td></td></tr><tr><td>7</td><td>7</td><td>21</td><td>35</td><td>42</td><td>56</td><td></td></tr><tr><td>9</td><td>9</td><td>27</td><td>45</td><td>54</td><td>72</td><td></td></tr></table>	SPINNER A							x	1	3	5	6	8		SPINNER B	2	2	6	10	12	16		4	4	12	20	24	32		6	6	18	30	36	48		7	7	21	35	42	56		9	9	27	45	54	72		B2	6	B1 for every 5 correct
	SPINNER A																																																						
	x	1	3	5	6	8																																																	
	SPINNER B	2	2	6	10	12	16																																																
		4	4	12	20	24	32																																																
6		6	18	30	36	48																																																	
7		7	21	35	42	56																																																	
9		9	27	45	54	72																																																	
b	i) $\frac{6}{25}$	B1																																																					
	ii) $\frac{4}{25}$	B1																																																					
	iii) $\frac{12}{25}$	B1																																																					
	iv) $\frac{1}{5}$	B1	Or equivalent																																																				
3	a	$\frac{18}{100} \times 265\,000 = 47\,700$ €265 000 + €47 700 €312 700	M1 M1 A1	6																																																			
	b	i) €344 500 – €265 000 = €79 500 ii) $\frac{79,500}{265,000} \times 100$ 30%	M1 M1 A1																																																				
4	a	Valid attempt Prime Factorisation $2 \times 2 \times 2 \times 2 \times 3 \times 5$ $2^4 \times 3 \times 5$	M1 (M)1 A1	6																																																			
	b	Valid attempt LCM $2^5 \times 3 \times 5$ 480	M1 M1 A1																																																				
5	a	A : B : C 1500 : 1250 : 1250 6 : 5 : 5	M1 A1	6																																																			
	b	$5 + 5 + 6 = 16$ $€304 \div 16 = €19$ $€19 \times 5 = €95$ $€19 \times 6 = €114$	(M)1 M1 A1 A1																																																				
6	a	AC = 10 cm Correct construction of 60° angle Correct arc of radius 4 cm Joining and labelling	B1 M1 A1 M1 A1	6																																																			
	b	97°	B1			±2°																																																	

7	a	$7x - 1$	B2	8	B1 for each correct term																
	b	$7x - 1 = 62$ $7x = 63$ $x = 9$	M1 M1 A1 ft																		
	c	16	B1																		
	d	$9(3) - 8$ 19	M1 A1 ft																		
8	a	Shape D (1, -1) (1, 2) (2, 1) (2, -1)	M1 A1	6	M1 for correct orientation																
	b	Reflection in the line $x = -1$	B1 B1																		
	c	Translation by $\begin{pmatrix} 2 \\ -3 \end{pmatrix}$	B1 B1																		
9	a	720 teenagers	B1	8	-1 e.e.o.o																
	b	$360^\circ \div 720 = 0.5$ $0.5 \times 132 = 66^\circ$ $0.5 \times 190 = 95^\circ$ $0.5 \times 56 = 28^\circ$ $0.5 \times 150 = 75^\circ$	M1 M3																		
	c	Correct drawing of angles	M2 A1 ft		M1 for every 3 correct angles																
10	a		B1 B1	8																	
	b	$9K = T - 8m$ $T = 9K + 8m$	M1 A1																		
	c	$12x + 8 = 38 - 3x$ $15x = 30$ $x = \frac{30}{15}$ $x = 2$	M1 M1 M1 A1																		
11	a	<table border="1" data-bbox="223 1173 788 1341"><tr><td>x</td><td>-3</td><td>0</td><td>4</td></tr><tr><td>$2x$</td><td>-6</td><td>0</td><td>8</td></tr><tr><td>-1</td><td>-1</td><td>-1</td><td>-1</td></tr><tr><td>y</td><td>-7</td><td>-1</td><td>7</td></tr></table> Correct plotting and joining	x	-3	0	4	$2x$	-6	0	8	-1	-1	-1	-1	y	-7	-1	7	M1 A1 M1	6	
	x	-3	0	4																	
	$2x$	-6	0	8																	
-1	-1	-1	-1																		
y	-7	-1	7																		
b	Same gradient	B1																			
c	$9 \neq 2(-6) - 1$ $9 \neq -13$ No	M1 A1																			
12	a	Area of trapezium = $\frac{(a+b)h}{2} = \frac{(89+107)50}{2} = 4900 \text{ m}^2$	M1 A1	8	Or more accurate																
	b	Area of circle = $\pi r^2 = \pi(7)^2$ $= 153.94 \text{ m}^2$	M1 A1																		
	c	Area of flower bed = $b \times h = 36 \times 50 = 1800 \text{ m}^2$ $4900 \text{ m}^2 - (1800 + 153.94) \text{ m}^2$ 2946 m^2	M1 A1 M1 A1 ft																		