



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	10	B1	1	
2	40%	B1	1	
3	BK 160	B1	1	
4	27	B1	1	
5	3	B1	1	
6	$12x - 32$	B1	1	
7	27.6 kg	B1	1	
8	0.42	B1	1	
9	205	B1	1	
10	Any correct fraction not necessarily simplified ex: $\frac{4}{10}, \frac{2}{5}, \frac{7}{20}, \frac{8}{20}, \frac{9}{20}$	B1	1	
11	$\frac{7}{2} - \frac{13}{8} = \frac{28}{8} - \frac{13}{8}$ $\frac{15}{8} = 1\frac{7}{8}$	(M)1 A1	2	
12	$25 - 4$ 21	(M)1 A1	2	
13	$\frac{€6.50 \times 20}{5}$ €26	(M)1 A1	2	(M)1 for dividing by 5
14	$-9 - 3 = -12$ -72	(M)1 A1	2	
15	$\frac{25}{6} \times \frac{3}{5} = \frac{5}{2}$ $2\frac{1}{2}$	(M)1 A1	2	o.e.

MAIN PAPER (80 marks)

Que.		Requirements	Mark		Additional Guidance																																														
1	a	€6.25 ÷ 5 €1.25	M1 A1	5																																															
	b	€8.45 ÷ 650 × 100 €1.30	M1 A1																																																
	c	Packet A	A1 ft																																																
2	a	i) 2 × 2 × 3 × 3 × 3 × 5 ii) 2 ² × 3 ³ × 5	M1 A1 ft	4																																															
	b	Valid attempt to find the LCM 540	M1 A1																																																
3	a	16:45 – 10 hrs 6:45 am	(M)1 A1	6	o.e.																																														
	b	i) 8:30 am 08:30	B1 B1																																																
		ii) five minutes past nine in the evening 9:05 pm	B1 B1																																																
4	a	<table><tr><td colspan="2"></td><td colspan="6">SPINNER A</td></tr><tr><td></td><td>x</td><td>1</td><td>3</td><td>5</td><td>6</td><td>8</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></tr><tr><td>4</td><td>4</td><td>12</td><td>20</td><td>24</td><td>32</td></tr><tr><td>6</td><td>6</td><td>18</td><td>30</td><td>36</td><td>48</td></tr><tr><td>7</td><td>7</td><td>21</td><td>35</td><td>42</td><td>56</td></tr><tr><td>9</td><td>9</td><td>27</td><td>45</td><td>54</td><td>72</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	5	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	$\frac{6}{25}$	B1																																																	
c	$\frac{4}{25}$	B1																																																	
d	$\frac{12}{25}$	B1																																																	
5	a	i) $\frac{15}{100} \times \text{€}760$ = €114	M1 A1	6																																															
		ii) €760 – €114 €646	M1 A1 ft																																																
	b	$\frac{18}{40} \times 100$ 45%	M1 A1																																																
6	a	$\begin{array}{r} -6(8) \\ 8+4 \\ -48 \\ \hline 12 \\ -4 \end{array}$	M1 M1 A1	8																																															
	b	$y - c = mx$ $x = \frac{y-c}{m}$	M1 A1																																																
	c	$12p - 20 = 136$ $12p = 156$ $p = 13$	M1 M1 A1																																																

7	a	3.5 : 1.5 : 2.5 7 : 3 : 5	(M)1 A1	5													
	b	6 + 4 + 5 = 15 $\frac{360}{15} = \text{€}24$ €24 × 4 €96	(M)1 M1 A1														
8	a	i) Correct BC of 9 cm and Point C labelled Correct CD of 7 cm Correct BD of 5.5 cm and Point D labelled	M1 M1 M1	7	Construction arcs seen												
		ii) ∠BCD = 38°	B1		± 2°												
	b	Circle of radius 6 cm Correct arcs of hexagon construction Accurate hexagon	M1 M1 A1		At least two arcs seen												
9	a	180 youths	B1	6													
	b	$\frac{360^\circ \times 36}{180} = 72^\circ$ $\frac{360^\circ \times 45}{180} = 90^\circ$ $\frac{360^\circ \times 30}{180} = 60^\circ$	M1 A1 } A1		For one correct angle												
	c	Correct angles drawn and labelled	B2		All correct B1 for every 2 correct angles												
10	a	Shape D – (1, 1) (2, 1) (2, –2)	B1 B1	6	B1 for correct orientation												
	b	Reflection in the line $x = -1$	B1 B1														
	c	Translation by $\begin{pmatrix} 2 \\ -3 \end{pmatrix}$	B1 B1														
11	a	180° – 66° = 114° Interior angles add up to 180°	A1 M1	8													
	b	66° Alternate angles are equal	A1 M1														
	c	66° Corresponding angles are equal	A1 M1														
	d	180° – (114° + 31°) = 35° Angles in a triangle add up to 180°	A1 ft M1														
12	a	Area = b × h Area = 18 × 10 m = 180 m ²	M1 A1	8													
	b	Area = $\frac{b \times h}{2} = \frac{7 \times 18}{2}$ = 63 m ²	M1 A1														
	c	Area of garden = 18 × 37 m = 666 m ² Area of grass: 180 + 63 m ² = 666 m ² – 243 m ² = 423 m ²	M1 M1 M1 A1 ft														
13	a	<table><tr><td>x</td><td>–2</td><td>–1</td><td>0</td><td>1</td><td>2</td></tr><tr><td>$y = 4x$</td><td>–8</td><td>–4</td><td>0</td><td>4</td><td>8</td></tr></table>	x	–2	–1	0	1	2	$y = 4x$	–8	–4	0	4	8	B3	6	–1 for e.e.o.o
	x	–2	–1	0	1	2											
	$y = 4x$	–8	–4	0	4	8											
	b	Correct plotting of points and drawing of straight line	M1														
c	i) 0.5	B1	o.e.														
	ii) –6	B1															