



Annual Examinations for Secondary Schools 2022

YEAR 9

MATHEMATICS

MARKING SCHEME

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)

Question		Requirements	Mark	Additional guidance	Total
1	(a)	139, 137	B1	Both correct	2
	(b)	22, 29	B1	Both correct	
2	(a)	$\frac{base \times height}{2} = \frac{10 \times 4}{2}$ 20	M1 A1		5
	(b)	$7 \times 3 \times 10$ $5 \times 4 \times 10$ 410	M1 M1 A1	For area of one cuboid For area of second cuboid	
3		$Speed = \frac{distance}{time} = \frac{26}{2}$ 13 km/hr	M1 A1		2
4	(a)	(i) 15	B1		4
		(ii) 16	B1		
	(b)	$\frac{1}{5}, \frac{1}{2}, \frac{3}{4}, \frac{4}{5}$	B2	f.t. B1 for first correct fraction. B1 for remaining fractions in order.	
5	(a)	17	B1		5
	(b)	20	B1		
	(c)	Attempt to multiply 1248	M1 A1		
	(d)	1510	B1		
6	(a)	$3(6) + 5(0) - 7(2)$ or $18 + 0 - 14$ 4	M1 A1		5
	(b)	$3x - 21$	B1		
	(c)	$5x + y$	B2	B1 for each correct term	
7		$360^\circ - (100^\circ + 40^\circ + 150)$ 70°	M1 A1		2

Main Paper (75 marks)

Question		Requirements	Mark	Additional guidance	Total
1	(a)	kilometres	B1		3
	(b)	millilitres	B1		
	(c)	kilograms	B1		
2		(a) eight or 8 (b) pentagon	B1 B1		2
3	(a)	(i) 50	B1		9
		(ii) 500	B1		
		(iii) 5	B1		
	(b)	$50 + 500 + 5$ 555	(M)1 A1		
	(c)	$€489 + €52 + €5.30$ €546.30	(M)1 A1		
	(d)	$€600 - €546.30$ €53.70	(M)1 A1		
4	(a)	9	B1		3
	(b)	13	B1		
	(c)	$\times 10$	B1		
5		$25\% \times €60 = €15$ $€60 - €15$ €45	M1 M1 A1		3
6	(a)	(i) $+€300$	B1	Accept €300	5
		(ii) -10	B1		
		(iii) -36	B1		
	(b)	$12^{\circ}\text{C} - 16^{\circ}\text{C}$ -4°C	(M)1 A1		
7	(a)	$3x = 18 - 12$ $x = \frac{6}{3} = 2$	M1 A1		4
	(b)	$-5 = 3x - 2x$ $x = -5$	M1 A1		
8	(a)	$\frac{20 + 21 + 22 + 22 + 23 + 23 + 24 + 24 + 24 + 24}{10}$ $\frac{227}{10}$ 22.7	(M)1 M1 A1		7
		(b) 24	B1		
		(c) 23	B1		
	(d)	$24 - 20$ 4	(M)1 A1		

9	(a)	Valid attempt at converting times to the same format 5.5 hrs	M1 A1	o.e.	7																								
	(b)	9:00 a.m. + 5.5 hrs = 2:30 p.m. 2:30 p.m. + 1 hr = 3:30 p.m. Yes he will be ready by 4:00 p.m.	M1 M1 A1	f.t.																									
	(c)	$5.5 \times \text{€}5.80$ €31.90	(M)1 A1	f.t.																									
10	(a)	Constructing a 60° angle (arcs seen) Accurate construction	M1 A1		8																								
	(b)	$180^\circ - (67^\circ + 48^\circ)$ $a = 65^\circ$ $180^\circ - 125^\circ$ $b = 55^\circ$ $180^\circ - 55^\circ$ $c = 125^\circ$	(M)1 A1 (M)1 A1 (M)1 A1																										
11	(a)	Drama $\Rightarrow$ 3 Reading $\Rightarrow$ 6 Watch TV $\Rightarrow$ 14 Total $\Rightarrow$ 40	B2	Award 1 mark for every two correct answers	8																								
	(b)	Music	B1	f.t.																									
	(c)	$14 - 6 = 8$	M1A1																										
	(d)	$\frac{3}{40}$	B1	f.t.																									
	(e)	Correct filling of bar chart	B2	ft. – 1 e. e. o. o.																									
12	(a)	N, M, R and S	B1	Award mark if 3 points are given.	4																								
	(b)	(i) SN (ii) 8 cm	B1 B1	± 0.1 cm																									
	(c)	24 cm	B1	f.t.																									
13	(a)	Cuboid, Pyramid, Cone	B1B1B1		6																								
	(b)	(i) Drawing of circle centre O radius 5 cm. (ii) Drawing angles of 60° at centre. Accurate hexagon in the circle.	M1 M1 A1	± 0.2 cm																									
14	(a)	<table border="1"><tr><td>x</td><td>-1</td><td>0</td><td>1</td><td>2</td><td>3</td></tr><tr><td>$2x$</td><td>-2</td><td>0</td><td>2</td><td>4</td><td>6</td></tr><tr><td>+1</td><td>+1</td><td>+1</td><td>+1</td><td>+1</td><td>+1</td></tr><tr><td>y</td><td>-1</td><td>1</td><td>3</td><td>5</td><td>7</td></tr></table>	x	-1	0	1	2	3	$2x$	-2	0	2	4	6	+1	+1	+1	+1	+1	+1	y	-1	1	3	5	7	B2	-1 e. e. o. o.	6
	x	-1	0	1	2	3																							
$2x$	-2	0	2	4	6																								
+1	+1	+1	+1	+1	+1																								
y	-1	1	3	5	7																								
(b)	Correct scale used Correct plotting of points Joining points to form a line	B1 B2 B1	f.t. Award B1 for two correct points plotted.																										