



Annual Examinations for Secondary Schools 2014

FORM 3 MATHEMATICS MARKING SCHEME

Notes for Marking of Scripts

Types of Marks

- **M**(ethod) 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. In general a correct method is implied by a correct answer and therefore **when a correct answer is given and no work is shown, no method marks are lost**.
- **A**(ccuracy) marks are 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 (M) or accuracy (A) marks are awarded when a wrong method leads to a correct answer.
- **B** marks are accuracy marks awarded for specific results or statements independent of the method used.

Misreading

M marks can still be earned (unless that part of the question is trivialized) but the final A marks are lost.

Crossed out working

An answer or working that is crossed out and not replaced is marked as if it was 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, 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 No.	Requirements	Marks	
1.	a) Any two correct pairs Other two correct pairs	B1 B1	4
	b) $990 + 750 = 1740$ 1 l 740 ml	M1 A1	
2.	11:50 – 1h 45 min 10:05 + 12 min 10:17 a.m. or am	M1 A1	2
	3.	$3 \times 4 = 12$ or $4 \times 3 = 12$	
4.	a) i. 0°C ii. -8°C	B1 B1	6
	b) 17	B1	
	c) 2, 27, -45 (shown in their correct positions)	B1 ($\times 3$)	
5.	a) 10 tins	B1	3
	b) $10 + 9 + 8 + 7 + 6 + 5 + 4 + 3 + 2 + 1$ 55 tins	M1 A1	
6.	(B) 30 cm	B1	1
7.	$\frac{8}{1} \times \frac{2}{7} = \frac{16}{7}$ $2\frac{2}{7}$	M1 A1	2
	8.	(B) Equilateral Triangle	
9.	a) Three 1 l bottles $\text{€}0.39 \times 3 = \text{€}1.17$ 1 l bottle + 2 l bottle $\text{€}0.39 + \text{€}0.70 = \text{€}1.09$	B1 B1 B1 B1	5
	b) €1.09	B1	
Total Marks			25

Main Paper (75 marks)

1.	a) Post Office	B1	2
	b) Hospital	B1	
2.	a) 150 000 000	B1	4
	b) i. $\text{€}58.36 \div 7 = \text{€}8.34$ ii. cent seen in a valid reason Eg. So that they get their answer in cent	M1 A1 B1	

3.	a)	$\frac{7}{15}$ (o.e)	B1	3
	b)	$\frac{13}{30}$	B1	
	c)	$\frac{3}{10}$ (o.e)	B1	
4.	a)	i. €2.88, €2.40	B1 B1	5
		ii. 288 : 240 Valid attempt at simplifying 6 : 5	M1 A1	
	b)	Pack of 4 and a valid explanation/working Eg. The pack of 4 batteries gives better value as 12 batteries would cost €4.50 instead of €4.80	B1	
5.	a)	$360 \div 6 = 60^\circ$ (A) 60°	M1 A1	4
	b)	$360^\circ - (90^\circ + 55^\circ + 63^\circ + 85^\circ + 11^\circ)$ 56°	M1 A1	
6.	a)	$7x - 2y$ $5x$	B1 B1 B1	5
	b)	$x - 3 + 5 = 11$ $x = 11 - 2$ $x = 9$	M1 A1	
7.	a)	South Street; 9:15 am	B1 B1	7
	b)	St Paul's Street	B1	
	c)	500 m – 300 m 200 m	M1 A1	
	d)	Valid reason for being 'at rest' Eg. Tourists take a break or Tourists visit the church	B1	
	e)	11:00 am	B1	
8.	a)	$\frac{40}{100} \times 17$ or 0.4×17 €6.80	M1 A1	5
	b)	€17.00 – €6.80 (seen or implied) €29.35 + €10.20 €39.55	M1 M1 A1	
9.	a)	$8x$	B1	5
	b)	$2x$	B1	
	c)	12	B1	
	d)	16, 2	B1 B1	

10.	a)	-1, 1, 7	B1 (×3)	8
	b)	(-1, -1); (1, 3); (3, 7) All correct	B1	
	c)	Any 2 correct plotted points Correct line	B1 B1	
	d)	6	B1	
	e)	Correct marking on graph ($y = 1$)	B1	
11.	a)	i. Addition seen or implied $\frac{428}{20}$ 21.4 cm (f.t. for incorrect addition)	M1 M1 A1 (f.t.)	9
		ii. $37 - 7$ 30 cm	M1 A1	
		iii. Frequency = 3; 6; 6; 5 Any two correct Other two correct	B1 B1	
		iv. Correct bar chart (f.t. for incorrect value in (iii))	B1 (f.t.)	
	b)	(B) mode	B1	
12.	a)	Correct attempt at constructing 90° Accurate construction	M1 A1	7
	b)	XY is 5 cm long (± 0.1 cm) YZ is 12 cm long (± 0.1 cm)	B1 B1	
	c)	XZ = 13 m (± 0.2 m)	A1 f.t.	
	d)	Angle correctly marked	B1	
	e)	22.5° ($\pm 1^\circ$)	B1	
13.	a)	(C) $T = 7n + 3$	B1	3
	b)	$45 = 7n + 3$ $45 - 3 = 7n$ $42 = 7n$ $6 = n$	M1 A1	
14.	a)	$V = 22.5 \text{ cm} \times 20.8 \text{ cm} \times 16.2 \text{ cm}$ 7581.6 cm^3	M1 A1	8
	b)	$A = 22.5 \text{ cm} \times 20.8 \text{ cm}$ 468 cm^2	M1 A1	
	c)	$A = \pi \times 7.3^2$ 167.415... $167.415... \times 4$ 670 cm^2	M1 M1 M1 A1	
Total Marks				75