

Annual Examinations for Secondary Schools 2014

FORM 4

MATHEMATICS Scheme D

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.

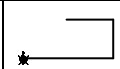
Units

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

Other

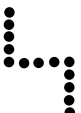
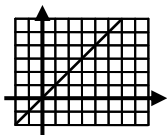
- Incorrect working or statement following a correct answer is ignored.
- Marks are not sub-divisible; no half marks may be awarded.
- Other abbreviations used:
 - o.e. (or equivalent)
 - e.e.o.o. (each error or omission)
- Markers are advised to indicate the M, A or B marks awarded in the body of the 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 (20 marks)

1	2	3	4	5	6	7	8	9	10
50	B or 23	<i>Correct sketch</i>	4/9	5	225°	14	11	PQ	12
11	12	13	14	15	16	17	18	19	20
120	31		A	135	5	3	34	<i>Correct shape</i>	€0.60

Main Paper (80 Marks)

Question	Requirements	Additional Guidance	Marks
1.	(a) 722 (b) 17, 47	B1 B1 B1	3
2.	(a) (i) 27000 (ii) 27 (b) 0.17, 1.72, 17, 170	B1 B1 B2	4
3.	(a) 360° (b) $360^\circ - 90^\circ - 135^\circ - 100^\circ = 35^\circ$	B1 M2 A1	4
4.	(a) 15, 23 (b) 3.122 km (c) greater	B1 B1 B1 B1	4
5.	(a) $15 - 10x$ (b) 12 squares shaded	M1 A1 B1	3
6.	(a) $310 \times 15 / 100 = 46.5$ (b) $31 + 30 + 15 = 76$ (c) $100 - 25 = 75 \text{ cm}^2$	M1 A1 M1 A1 M1 A1	6
7.	(a) $10 - 2.80 = 7.20$ $7.20/3 = \text{€}2.40$ (b) 90, 50, 100, 90	M1 M1 A1 <i>B1 for each correct answer</i>	7

8.	(a) $5.3 \times 9.1 \times 12.2 = 588.406 \approx 588.41 \text{ cm}^3$ (b) (i) $x = 8 \text{ cm}$ $y = 16 \text{ cm}$ (ii) 96 cm	M1 A1 B1 B1 M1 A1	6
9.	(a) 5/16 (b) $8/16 = 1/2$ <i>accept</i> 8/16 (c) 13/16 (d) 3/11	B1 B1 B1 B1	4
10.	(a) SE (b) W (c) N (d) 90°	B1 B1 B1 B1	4
11.	(a) $4x = 28$ $x = 28/4 = 7$ (b) 25, 36, 49 (c) 35 (d) $6p - 4q$	M1 M1 A1 B1 B1 B1 B1 B1	8
12.	(a) (i) $2.10 \times 5 = \text{€}10.50$ (ii) 20% (b) (i) <i>Correct shape:</i>  (ii) 16 (iii) D	M1 A1 B1 B2 B1 B2	8
13.	(a) 70, 80, 50 (b) $90 + 70 + 120 + 80 + 90 + 50 = 500$ (c) $90 \times 2 = 180$ (d) $120:90 = 4:3$	B1 B1 B1 M1 A1 M1 A1 M1 A1	9
14.	(a) (i) 3, 6 (ii) C <i>or</i> $y = x + 2$ (iii) <i>Correct graph</i>  (b) (i) $12 + \dots + 20 = 210$ $210/7 = 30$ (ii) 12 13 18 (20) 22 60 65	B1 B1 B1 B1 M1 M1 A1 M2 A1	10