DEPARTMENT FOR CURRICULUM,
RESEARCH, INNOVATION AND LIFELONG LEARNING
Directorate for Learning and Assessment Programmes
Educational Assessment Unit

LEVELS

7 – 8

Annual Examinations for Middle Schools 2018

YEAR 8 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.

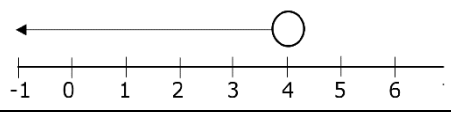
Units

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

Other

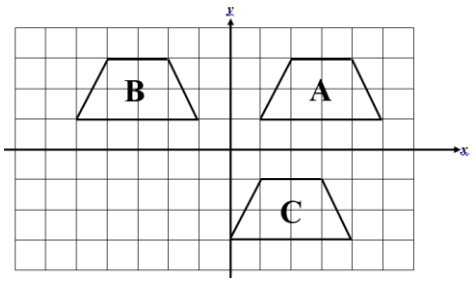
- Incorrect working or statement following a correct answer is ignored.
- Marks are not sub-divisible; no half marks may be awarded.
- Other abbreviations used:
  - o.e. (or equivalent)
  - e.e.o.o. (each error or omission)
- Markers are advised to indicate the M, (M), A or B marks awarded in the body 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 (Total: 25 Marks)

Ques.		Requirements	Mark		Additional Guidance
1	(a)	8 , – 8 in any order	B1	**4**	For each part, both numbers must be correct to be awarded B1
	(b)	10 , – 5 OR – 20 , 10 in that order	B1		
	(c)	– 8 , – 3 OR – 3, 2 in that order	B1		
	(d)	– 5 , 2 in any order	B1		
2		$4\frac{1}{2}$, $5\frac{1}{4}$	B1	**1**	Both correct o.e.
3	(a)		B1 B1	**4**	Award 1 mark for circle on the number 4 and 1 mark for arrow towards left
	(b)	0.05 , 0.5 , 0.55 , 5	B1		
	(c)	13.4185	B1		
4		$a = 70°$ (complementary angles) $b = 70°$ (alternate angles) $c = 60°$ (angles on a straight line)	B1 B1 B1 B1 B1 f.t. B1	**6**	Accept 'angles that add up to 90' Or angles in a Δ
5	(a)	Common denominator 6 seen $2\frac{1}{6}$	M1 A1	**4**	
	(b)	(i) =	B1		
		(ii) <	B1		
6	(a)	24 – 9 + 36 51	(M)1 A1	**3**	Substitution
	(b)	127	B1		
7	(a)	*l*	B1	**2**	
	(b)	cm^3	B1		
8		5 cm	B1	**1**	

MAIN PAPER (Total: 75 Marks)

Ques.		Requirements	Mark		Additional Guidance
1		***Nearest Whole*** | ***Approximate Answer*** | ***Accurate answer correct to 1 d.p.*** $4 \times 7 - 8$ | 20 | 18.8 **$23 + 9 \div 3$** | **26** | **26.9**	B1 B1 B1	**3**	1 mark each
2	(a)	$\frac{2}{5} \times 40$ = 16 kg	(M)1 A1	**5**	
	(b)	24 kg	B1 f.t.		For incorrect 16 kg
	(c)	$\frac{20}{100} \times 24 = 4.8$ kg 4800 g	M1 A1 f.t.		For incorrect 16 kg

3	(a)	36 : 80 : 60 9 : 20 : 15	M1 A1	**4**	
	(b)	$30 \div 10 = 3\ ml$ $85 \times 3 = 255\ ml$	M1 A1		
4	(a)	<table><tr><th>Fraction</th><th>Decimal</th><th>Percentage</th></tr><tr><td></td><td></td><td>$37\frac{1}{2}\%\ or\ 37.5\%$</td></tr><tr><td>$\frac{68}{100} or \frac{17}{25}$</td><td>0.68</td><td></td></tr></table>	B3	**7**	1 mark for each missing answer
	(b)	(i) €4320 €28320	M1 A1		Or $118\% \times 24\,000$
		(ii) 28320 – 5000 = 23320 $\frac{23320}{10}$ €2332	(M)1 A1 f.t.		For incorrect €28320
5	(a)	26°	B1	**3**	
	(b)	3.4 cm 6.8 m	(M)1 A1		$\pm$0.2 m
6	(a)	(i) B → $\frac{4}{7}$ C → $\frac{1}{3}$ (ii) 0	B1 B1 B1	**6**	
	(b) (i) (ii)		B1 B1 B1		Reflection: Award 1 mark if Shape B is correct Translation: Award 1 mark for shifting 1 square to the left and 1 mark for shifting 4 squares down Do not deduct mark if not labelled
7	(a)	Area of rectangle 15.7×8.3 130.31 cm^2 Area of triangle $10.2 \times 8.3 \div 2$ 42.33 cm^2 Total = 173 cm^2	(M)1 (M)1 M1 A1	**8**	For addition
	(b)	(i) $36 \times 42 \times 21$ 31752 cm^3	(M)1 A1		
		(ii) $31752 \div 1000$ 31.8 litres	(M)1 A1		
8		Vol of Prism = Area of c.s. × height $h = \frac{337.5}{28.6}$ 11.8 cm	M1 M1 A1	**3**	
9	(a)	$A = b \times h$	B1	**4**	o.e.
	(b)	$5x + 20$	B1		
	(c)	Substitution in either $5(x + 4)$ or in $5x + 20$ 65 cm^2	M1 A1		

10	(a)	(i) $Z = 4x + 5$ (ii) 15	M1 A1 B1	**9**	
	(b)	$6(2x - 1)$	B1		
	(c)	$5w - 2w = 9 + 3$ $3w = 12$ $w = 4$	M1 M1 A1		Award the first mark for collecting like terms Accept any other valid method
	(d)	$2n$ must be even $2 \times n$ When a whole number is multiplied by 2, the answer is even	B1 B1		Or a similar answer
11	(a)	XY = 10 cm	B1	**5**	
	(b)	XZ = 8 cm YZ = 6 cm	B1		Both correct
	(c)	Bisection of angle X Labelling Q	B1 B1		Arcs seen
	(d)	YQ = 3.2 cm	B1		$\pm$0.2 cm
12	(a)	24	B1	**10**	
	(b)	3	B1		
	(c)	4	B1		
	(d)	9	B1		
	(e)	$6 + 10 + 21 + 8$ 45	M1 A1		Attempt to multiply
	(f)	Correct angles 60° , 90° , 75° , 105° , 30° Labelling pie chart	B3 B1		$\pm$2° (–1 e.e.o.o.) Number of pets seen
13	(a)	B (3 , 4) D (7 , 8)	B1 B1	**8**	
	(b)	The *y*-coordinate is one more than the *x*-coordinate OR The *x*-coordinate is one less than the *y*-coordinate	B2		
	(c)	Gradient = 1 *y*-intercept = 1	B1 B1		
	(d)	$y = x + 1$	B2		o.e.

End of Marking Scheme