



Annual Examinations for Middle Schools 2023

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.

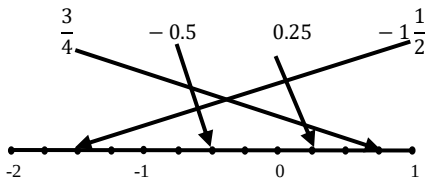
Units

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

Other

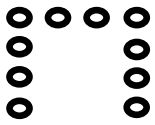
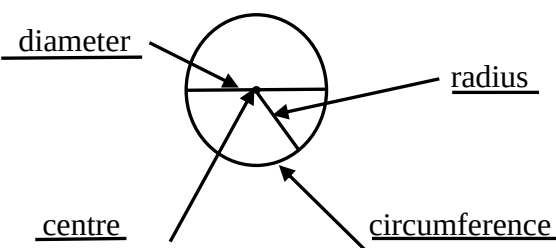
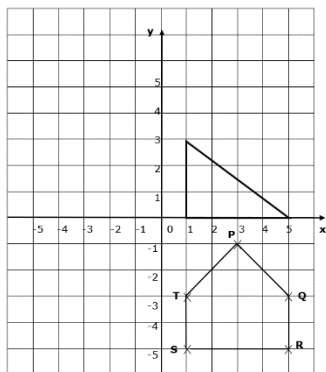
- Incorrect working or statement following a correct answer is ignored.
- Marks are not sub-divisible; no half marks may be awarded.
- Other abbreviations used:
 - * o.e. (or equivalent)
 - * e.e.o.o. (each error or omission)
- Markers are advised to indicate the **M**, **(M)**, **A** or **B** marks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

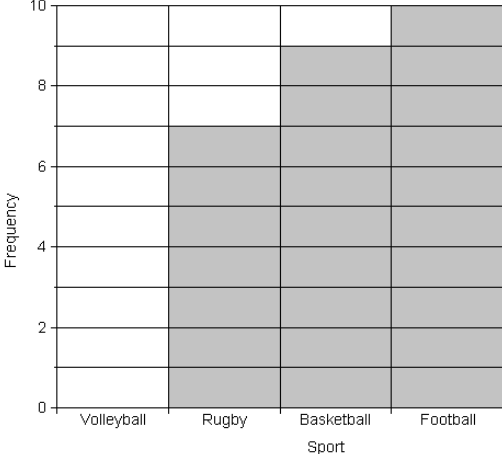
Non-Calculator Paper (25 marks)

Question	Requirements	Mark	Total	Additional guidance
1	a) Nine thousand four hundred thirty-two	B1	3	Do not penalise spelling mistakes
	b) 400	B1		o.e.
	c) 943 200	B1		
2	a) 12	B1	4	
	b) 4	B1		
	c) $50 - 10 + 3$ 43	(M)1 A1		
3	a) $-3 + 14$ 11	M1 A1	3	Also accept -4
	b) 4	B1		
4	$6 \times 9 + 7 \times 2 - 15$ $54 + 14 - 15$ 53	(M)1 M1 A1	3	For substitution For 54 or 14 seen
5	a) 45	B1	3	
	b) 20	B1		
	c) 7.5	B1		
6		B4	4	-1 e. e. o. o.
7	a) $\frac{3}{5} \times 60$ 36	M1 A1	5	Valid attempt at simplifying
	b) (i) 12 seen (ii) $60 - 12$ 48	M1 M1 A1 f.t.		f.t. from bi)

Main Paper (75 marks)

Question		Requirements			Mark	Total	Additional guidance									
1	a)	81, 100			B1 B1	4										
	b)	6.0, 5.5			B1 B1											
2		<table><tr><td>Percentages</td><td>Decimals</td><td>Fractions in lowest terms</td></tr><tr><td>40%</td><td>0.4</td><td></td></tr><tr><td></td><td>0.45</td><td>$\frac{9}{20}$</td></tr></table>			Percentages	Decimals	Fractions in lowest terms	40%	0.4			0.45	$\frac{9}{20}$	B1 B1 B1 B1	4	
		Percentages	Decimals	Fractions in lowest terms												
		40%	0.4													
	0.45	$\frac{9}{20}$														
3	a)	225 ÷ 12 18.75			M1 A1	4										
	b)	19			B1											
	c)	B			B1 f.t.		f.t. from a) and b)									

4	a)		B2	4	
	b)	Attempt to find the Pattern 8 18	(M)1 A1		
5	a)	1, 2, 3, 6, 9, 18	B2	5	B1 for every 3 correct factors
	b)	(i) $\frac{1}{2}$	B1		o.e.
		(ii) $\frac{1}{3}$	B1		o.e.
		(iii) 0	B1		Impossible
6	a)	5	B1	2	
	b)	4	B1		
7			B4	4	
8	a)	$(11 \times 13) + (4 \times 5)$ 163	M1 M1 A1	9	f.t. from a) and b) f.t. from c)
	b)	$(11 \times 13) + (2 \times 11 \div 2)$ 154	M1 M1 A1		
	c)	A	B1 f.t.		
	d)	163×1600 260 800	M1 A1 f.t.		
9	a)	$2 \times 2 \times 2$ 8	(M)1 A1	5	
	b)	(i) cylinder (ii) cuboid (iii) cone	B1 B1 B1		
10	a)	A (−5, 5), B (−1, 2), C (−5, 2)	B3	10	B1 for each correct coordinate
	b)		M1 M1		For correct direction For correct size
	c) (i)		B3		−1 e. e. o. o.
	(ii)	Joining points	B1		
	(iii)	Pentagon	B1		

11	a)	$1815 \div 11$ 165	M1 A1	7																			
	b)	161	B1																				
	c)	150, 151, 153, 161, 161, 162, 170, 171, 177, 179,180 162	M1 A1																				
	d)	$180 - 150$ 30	M1 A1																				
12	a)	<table><tr><th>Favourite Sport</th><th>Tally</th><th>Frequency</th></tr><tr><td>Volleyball</td><td> </td><td></td></tr><tr><td>Rugby</td><td></td><td>7</td></tr><tr><td>Basketball</td><td></td><td>9</td></tr><tr><td>Football</td><td></td><td>10</td></tr><tr><td colspan="2">Total</td><td>30</td></tr></table>	Favourite Sport	Tally	Frequency	Volleyball			Rugby		7	Basketball		9	Football		10	Total		30	B2	6	-1 e. e. o. o. f.t. from a) f.t. from a) f.t. from a) -1 e. e. o. o.
	Favourite Sport	Tally	Frequency																				
	Volleyball																						
	Rugby		7																				
Basketball		9																					
Football		10																					
Total		30																					
b)	Football	B1 f.t.																					
c)	$\frac{2}{15}$	B1 f.t.																					
d)	<div><p>Favourite Sport</p><p>Frequency</p><p>Volleyball Rugby Basketball Football</p><p>Sport</p></div>	B2 f.t.																					
13	a)	Ferry B	B1	5																			
	b)	Ferry C	B1																				
	c)	Recognising the correct time 09:30	(M)1 A1																				
	d)	Ten past eleven in the morning	B1			o.e.																	
14	a)	$360^\circ - (90^\circ + 120^\circ + 70^\circ)$ $a = 80^\circ$	M1 A1	6																			
	b)	$180^\circ - (85^\circ + 45^\circ)$ $b = 50^\circ$	M1 A1																				
	c)	$c = 65^\circ$ $d = 115^\circ$	B1 B1																				