HALF-YEARLY EXAMINATION – FEBRUARY 2017

YEAR 7   **MATHEMATICS**   **Marking Scheme**

Aids 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 mark 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 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 mark scheme.

Other

- ➢ Incorrect working or statements following a correct answer are ignored.
- ➢ Marks are not sub-divisible; no half marks may be awarded.
- ➢ Other abbreviations used:
  - o o.e. (or equivalent)
  - o 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)

Quest.		Requirements	Mark	Additional Guidance	
1	a	Jane	B1		**2**
	b	Three billion, twenty million, one thousand and five	B1		
2	a	12	B1		**2**
	b	21	B1		
3		Unit 1: s; hour Unit 2: × 1000; ÷ 10 Unit 3: m; days	B3	*B1 for every 2 correct entries*	**3**
4	a	 	16000	3200	80	 	3600	720	18	 +19280 4338 23618	B1 B1 B1 B1 (f.t.)	*B1 for any 3 correct entries* *B2 for all 6 correct entries* *Both correct*	**6**
	b	24100	B1	*Or any other valid reason*	
	c	Subtract 482	B1		
5	a	Part i)	B1	*Award if all correct;* *B1 for any two correct*	**3**
	b	$\dfrac{3}{7}$; $\dfrac{12}{28}$; $\dfrac{18}{42}$	B2		
6	a	10 cm	B1	±1	**2**
	b	45°	B1	±10	
7		82 + 13 = 95 95 + 82 = 177 177 + 265 = 442 500 − 442 = 58	M1, A1 M1 M1 A1	*Accept other valid methods*	**5**
8		1; 3; 7 11	B1 B1		**2**
					25

Main Paper (75 marks)

Quest.		Requirements	Mark	Additional Guidance	
1	a	$10,000,000,000 = 10^{10}$	B1		**2**
	b	10,000,000	B1		
2	a	31, 73, 59	B1	*All correct*	**4**
	b	They only have two factors: one and itself	B1		
	c	Valid method $2^3 \times 3^2 \times 5$	M1 A1	*Seen or implied*	
3		$\frac{3}{5} = \frac{9}{15}$; Add $\frac{9}{15}$ and $\frac{2}{15}$ Attempt to subtract Attempt to add, $^3/_{15}$	M1, M1 M1 M1, A1	*Seen or implied*	**5**
4	a	98, 94	B1	*Both correct*	**3**
	b	16, 25, … 49, 64, …	B2	*Award B2 if all correct; B1 for any two correct*	
5		$a = 75°$ Corresponding angles $b = 75°$ Alternate angles $c = 20°$ Vertically opposite angles $d = 85°$ Angles in a triangle $e = 95°$ Interior angles	B1, B1 B1, B1 B1, B1 B1, B1 B1, B1	*Accept other valid reasons*	**10**
6	a	P (½) Tossing a coin and obtaining heads. P (1) The sun will come up tomorrow.	B1 B1	*Accept any other valid statements*	**5**
	b i)	Yes. Both are ⅙	B1, B1		
	ii)	½	B1		
7	a	Correct drawing of pattern	B1		**7**
	b	3, 6, 9, 12, 15, ….. 30	B3	*Award B1 for every 2 correct*	
	c	Pattern number $\times$ 3	B1		
	d	Yes $345 \div 3 = 115$	B1 B1		
8	a	Correct plotting of coordinates Joining line	B3 B1	*(–1 e.e.o.o.)*	**6**
	b	(0, 0)	B1		
	c	Joining opposite vertices	B1		
9	a	50; 143; 90; 30	B4	*B1 for each correct answer*	**6**
	b	Right angled; scalene	B1, B1		

Quest.		Requirements	Mark	Additional Guidance	
10	a	6 : 12: 9	B1	*Seen or implied*	**5**
	b	2 : 4 : 3	B1		
	c	Multiplying each ratio by 9 Mary's = €36; Jake's = €27	M1 A1, A1		
11	a i)	90 – 25 = 65	M1, A1		**7**
	ii)	Adding all other marks Subtracting from 400 75	M1 M1 A1	*Award mark if 400 is seen*	
	b i)	Yes	B1		
	ii)	He got 65 in all exams	B1		
12	a	<table><tr><td>Fraction</td><td>Decimal</td><td>Percentage</td></tr><tr><td>½</td><td></td><td>50%</td></tr><tr><td></td><td>0.2</td><td>20%</td></tr><tr><td>⁴⁵⁄₁₀₀ or ⁹⁄₂₀</td><td>0.45</td><td></td></tr></table>	B3	*Award B1 for every 2 correct*	**9**
	b	Correct cancelling $^3/_{45}$ or $^1/_{15}$	M1 A1		
	c	Offer A: $\frac{40}{100} \times 120 = 48$ Offer B: 120 – 50 = 70	M1 M1	*Seen or implied*	
		B; 2	B1, B1		
13	a i)	USA	B1	*Accept other valid reason*	**6**
	ii)	Highest bar	B1		
	b i)	India	B1		
	ii)	10%	B1		
	c i)	Mexico	B1		
	ii)	It was approximately 35% and now it is approximately 70%	B1	*Accept any other valid reason*	
					75