

# KULLEĠĠ SAN BENEDITTU

## Secondary School, Kirkop

### HALF YEARLY EXAMINATION – 2016/2017

YEAR 8 Levels 5-7

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.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		Requirements	Mark	Additional Guidance	Total
<b>1</b>	(a)	−9	B1		<b>2</b>
	(b)	−7	B1		
<b>2</b>		Correct numbering on vertical axis	B1	B1 for every 3 correct bars	<b>3</b>
		Height of bars: Monday 12 Tuesday 6 Wednesday 14 Thursday 4 Friday 12 Saturday 22	B2		
<b>3</b>		Multiple of 10 → 4990 Prime Number → 31 Square Number → 81 Cube Number → 8	B3	(−1 e.e.o.o)	<b>3</b>
<b>4</b>		$26 \times 9 = (\underline{20} + 6) \times 9$ $= \underline{180} + 54$ $= \underline{234}$ cent = € <u>2.34</u>	B1 B1 B1	both correct	<b>3</b>
<b>5</b>	(a)	Acute	B1		<b>2</b>
	(b)	45°	B1		
<b>6</b>		3.78 + 8.35 = 12.13kg	M1 A1		<b>2</b>
<b>7</b>	(a)	60, 75	B1	(both correct)	<b>2</b>
	(b)	3, −3	B1	(both correct)	
<b>8</b>	(a)	Adults, 6	B2		<b>5</b>
	(b)	$(2 \times 10) + (3 \times 6) =$ €38	M1 A1		
	(c)	€38 + €12 = €50	B1		
<b>9</b>		4 ⇔ 3 5 ⇔ 7 6 ⇔ 4 7 ⇔ 5 8 ⇔ 6 10 ⇔ 1	B3	B1 for every 2 correct	<b>3</b>

**Main Paper (75 marks)**

Question		Requirements			Mark	Additional Guidance	Total																
1	(a)	$\underline{1} \times \underline{32} = 32$ $\underline{2} \times \underline{16} = 32$ $\underline{4} \times \underline{8} = 32$			B3	B1 for every pair	5																
	(b)	1, 2, 4, 8, 16, 32			B1 B1	for factors correct order																	
2		$\frac{63}{100}$		0.63	B1 B1		4																
		$\frac{25}{100}$ o.e.	25%		B1 B1																		
3	(a)	10 km			B1		3																
	(b)	−12 °C			B1																		
	(c)	−5			B1																		
4		impossible likely unlikely certain			B4		4																
5	(a)	160°			B1		3																
	(b)	Drawing an angle of 35° Labelling the angle			B1 B1	(±2°)																	
6	(a)	<table border="1"><thead><tr><th></th><th colspan="3">Round to the:</th></tr><tr><th></th><th>Nearest 10</th><th>Nearest 100</th><th>Nearest 1000</th></tr></thead><tbody><tr><td>1340</td><td><u>1340</u></td><td><u>1300</u></td><td>1000</td></tr><tr><td>2785</td><td>2790</td><td><u>2800</u></td><td><u>3000</u></td></tr></tbody></table>				Round to the:				Nearest 10	Nearest 100	Nearest 1000	1340	<u>1340</u>	<u>1300</u>	1000	2785	2790	<u>2800</u>	<u>3000</u>	B4		5
		Round to the:																					
	Nearest 10	Nearest 100	Nearest 1000																				
1340	<u>1340</u>	<u>1300</u>	1000																				
2785	2790	<u>2800</u>	<u>3000</u>																				
(b)	11			B1																			

7	(a)	$\frac{1}{2} = \frac{10}{20}$ $\frac{3}{4} = \frac{15}{20}$ $\frac{3}{5} = \frac{12}{20}$ $\frac{9}{10} = \frac{18}{20}$	B4		6
	(b)	$\frac{9}{10}, \frac{3}{4}, \frac{3}{5}, \frac{1}{2}$	B2	B1 for largest and smallest fraction	
8	(a)	$339.8\text{g} - 20.6\text{g} = 319.2\text{g}$	M1 A1		6
	(b)	$319.2\text{g} \div 42 = 7.6\text{g}$	M1 A1		
	(c)	$7.6\text{g} \times 10 = 76\text{g}$	M1 A1		
9		$a = 360^\circ \div 6 = 60^\circ$ $90^\circ + 40^\circ = 130^\circ$ $b = 180^\circ - 130^\circ = 50^\circ$	M1 A1	(seen or implied)	6
		$65^\circ + 45^\circ = 110^\circ$ $b = 180^\circ - 110^\circ = 70^\circ$	M1 A1	(seen or implied)	
10	(a)(i)	$\frac{3}{8} + \frac{2}{8} = \frac{5}{8}$	M1 A1		6
	(a)(ii)	$1 - \frac{5}{8} = \frac{3}{8}$	B1	f.t.	
	(b)	$320 \div 8 = 40$ $40 \times 3 = 120$ calories	M1 M1 A1		

<b>11</b>	a) (i)	75 + 90 + 73 + 66 + 80 + 92 + 90 + 90 = 656 656 ÷ 8 = 82	M1 M1 A1		<b>8</b>
	a) ii)	90	B1		
	a) iii)	66, 73, 75, 80, 90, 90, 90, 92 80 + 90 = 170 ÷ 2 = 85	M1  A1	(seen or implied)	
	b)	<i>Wrong</i> <i>because the range is 92 – 66 = 26</i>	B1 B1		
<b>12</b>		$\frac{40}{100} \times \frac{110}{1} =$  € 44	M1 M1  A1	converts 40%	<b>3</b>
<b>13</b>			B2		<b>2</b>
<b>14</b>		$y = 3(2) + 6(7) - 4(0)$ 6 + 42 – 0 =  48	M1 M1 M1 A1	at least one correct all correct	<b>4</b>
<b>15</b>	a) i)	23.34kg, 26.2kg, 26.23kg, 32.439kg, 33.01kg,	B1 B1 B1	First one correct Last one correct All correct	<b>10</b>
	a) ii)	2.0, 2.03, 2.333, 2.9, 2.99	B1 B1 B1	First one correct Last one correct All correct	
	b)	0.21, 0.34, 0.47, 0.58	B4		