



KULLEĠĠ SAN BENEDITTU

Secondary School, Kirkop

HALF YEARLY EXAMINATION – 2016/2017

YEAR 9 Track 2

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 (Total: 25 Marks)

Question.		Requirements	Mark	Additional Guidelines
1.	a	50 mm	B1	4
	b	1210 g	B1	
	c	60mins + 15mins (seen or implied) = 75 mins	M1 A1	
2.		7:4	M1	1
3.		€100 reduction (seen or implied) $\frac{100}{500} \times 100 = 20\%$	M1 M1 A1	3
4.		$Time = \frac{Dist}{Speed}$ $Time = \frac{95km}{19km/hr} = 5hrs$	M1 A1	2
5.	a	6 ; 2 ; 3	B3	5
	b	8p – 12 q	B2	
6.		$3x - 8 = 16$ $3x = 24$ $x = 8$	M1 M1 A1	3
7.		$1(2) + 3(-3)$ $= 2 + (-9)$ $= -7$	M1 M1 A1	3
8.		$2x \times 2x$ or C	B1	1
9.	a	12	B1	3
	b	13	B2	
				<i>Award 1 mark if ages set in order of size</i>

MAIN PAPER (Total: 75 Marks)

Quest.		Requirements	Mark	Additional Guidelines
1.	a	$\frac{4674}{201} = 23.253...$ ≈ 20 (nearest 10)	M1 A1	4
	b	$\frac{5000}{200} = 25$	M1 A1	
2.		$\frac{5(350 - 32)}{9}$ $= \frac{1590}{9}$ $= 176.6666$ ≈ 176.67	M2 M1 M1 A1	5
				<i>Correct use of formula</i>

3.	a	64000	B1	5	
	b	3.9×10^{-3}	B1		
	c	$3.2 \times 4.5 = 14.4$ $= 14.4 \times 10^5$ $= 1.44 \times 10^6$	M1 M1 A1		
4.	a	Range: $21 - 9 = 12$ Mean: $\frac{60}{4} = 15$	B1 M1 A1	6	
	b	Mean of: $12 + 24 + x = 15$ Total = $15 \times 3 = 45$ So $x = 45 - (12 + 24)$ $= 9$	M1 M1 A1		
5.	a	$W = 120 - 2m$	B2	5	award 1 mark each for 120 and $-2m$
	b	$90 = 120 - 2m$ $2m = 120 - 90$ $2m = 30$ $m = 15$	M1 M1 A1		
6.	a(i)	$5c^2 + 6c$	B1	8	award 1 mark for every 2 correct entries
	a(ii)	$-15ab$	B1		
	a(iii)	$2q^2$	B1		
	b	$11y ; 11y$	B2		
	c	$18x - 30 - 5x + 15$ $13x - 15$	M2 A1		
7.	a(i)	10:60 1:6	M1 A1	6	accept any other valid reason
	a(ii)	7:35 1:5	M1 A1		
	b	No, because the sides are enlarged in different ratios.	B2		
8.	a	Wednesday	B1	6	
	b	Sunday	B1		
	c	$5 - (-1)$ $= 5 + 1 = 6$	M1 A1		
	d	Saturday	B2		
9.	a	360°	B1	10	
	b	$360^\circ - (90^\circ + 40^\circ + 45^\circ + 95^\circ + 25^\circ)$ $= 360^\circ - 295^\circ$ $= 65^\circ$	B2 A1		
	c	1 ext. angle = $360^\circ \div 8 = 45^\circ$ So 1 int. angle = $180^\circ - 45^\circ = 135^\circ$	B2 A1		
		8 ; 40 ; 45	B3		
10	a	The number of white tiles in the pattern	B1	6	
	b	Black tiles: 1 White tiles: 36	B1 B1		
	c	$61 = 1 + 3N$ $60 = 3N$ $20 = N$	M1 M1 A1		

11.		<table><tr><th>Preferred Social Network</th><th>Percentage of teenagers</th><th>Number of teenagers</th></tr><tr><td>Facebook</td><td></td><td>66</td></tr><tr><td>Snapchat</td><td></td><td>55</td></tr><tr><td>Instagram</td><td></td><td>44</td></tr><tr><td>Twitter</td><td></td><td>33</td></tr><tr><td>WhatsApp</td><td>10%</td><td>22</td></tr><tr><td>Altogether</td><td>100%</td><td>220</td></tr></table>	Preferred Social Network	Percentage of teenagers	Number of teenagers	Facebook		66	Snapchat		55	Instagram		44	Twitter		33	WhatsApp	10%	22	Altogether	100%	220	B8	8	<i>award 1 mark for each correct entry</i>
Preferred Social Network	Percentage of teenagers	Number of teenagers																								
Facebook		66																								
Snapchat		55																								
Instagram		44																								
Twitter		33																								
WhatsApp	10%	22																								
Altogether	100%	220																								
12.	a	Correct drawing of circle with: centre O and radius 6cm	B1 B1	6	<i>ft</i>																					
	b	At least 3 correct angles of $60^\circ \pm 2^\circ$ at centre All angles correct AND joining of points Side of hexagon = 6cm ($\pm 0.2\text{cm}$) (<i>seen or implied</i>) Perimeter = $6\text{cm} \times 6 = 36$	M1 A1 B1 A1																							