CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the October/November 2014 series

0580 MATHEMATICS

0580/33 Paper 3 (Core), maximum raw mark 104

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2014 series for most Cambridge IGCSE®, Cambridge International A and AS Level components and some Cambridge O Level components.

® IGCSE is the registered trademark of Cambridge International Examinations.

CAMBRIDGE
International Examinations

Abbreviations

cao correct answer only
dep dependent
FT follow through after error
isw ignore subsequent working
oe or equivalent
SC Special Case
nfww not from wrong working
soi seen or implied

Qu.	Answers	Mark	Part Marks
1 (a) (i)	4, 5, 3, 6, 2	**2**	**B1** for 3 correct or for fully correct tally or for 4 5 6 3 2 in tally column
(ii)	Correct bar chart	**3FT**	**B1** for linear vertical scale to at least 6 **B2** for all bars correct height and equal width bars Or **B1** for unequal widths or at least four bars correct height and equal width
(b)	$\frac{14}{24}$ oe or 0.583[3...] or 58.3[3...]%	**1**	
(c)	No, 6 of each but different nos of boys and girls questioned oe	**1**	
(d) (i)	2	**2**	**M1** for 12th/13th value used
(ii)	2.28	**3**	**M1** for [0 × 4] + 1 × 6 + 2 × 5 + 3 × 3 + 4 × 5 + [5 × 0] + 6 × 2 **M1 dep** for *their* 57 ÷ 25
2 (a)	249.75 **cao**	**1**	
(b)	1080 × 0.8 [= 864]	**1**	Or 1080 – 1080 × 0.2
(c) (i)	230.4[0]	**2**	**M1** for 864 ÷ (9 + 4 + 2)
(ii)	$\frac{3}{5}$ **cao**	**2**	**B1** for $\frac{9}{15}$ oe
(d) (i)	488.75	**2**	**M1** for 425 (1 + 0.15) oe
(ii)	19.15	**2FT**	**M1** for *their* **(d)(i)** × 0.52 [= 254.15]
(e) (i)	12.5	**1**	
(ii)	172.93	**3**	**M2** for 1225×1.045^3 [= 1397.93] Or **M1** for 1225 × 1.045 × 1.045 seen

© Cambridge International Examinations 2014

3	**(a)**	10	**1**	
	(b)	Before, steeper gradient oe	**1**	
	(c)	11 20	**1**	
	(d) (i)	1 hour 48 minutes	**2**	**M1** for $\frac{18}{10}$ [× 60] oe
	(ii)	Correct ruled lines drawn	**2**	**B1** line from (11 20, 18) to (12 10, 18) **B1FT** for line (*their* 12 10, 18) to (13 58, 0)
	(e) (i)	10 57	**1**	
	(ii)	24	**1**	
	(f)	Bearing 110° Length 3.25 cm	**1** **1**	
4	**(a) (i)**	85	**1**	
	(ii)	10	**1FT**	**FT** 95 – *their* **(i)**
	(iii)	320	**1FT**	**FT** 330 – *their* **(ii)**
	(iv)	95	**1**	
	(v)	95	**1FT**	**FT** *their* **(iv)**
	(vi)	55	**1FT**	**FT** 150 – *their* **(iv)**
	(vii)	*BCE* and *GCF* or *BCD* and *GCH* or *CED* and *CFH*	**1**	
	(b) (i)	30°	**2**	**M1** for 360 ÷ 12
	(ii)	150°	**1FT**	**FT** 180 – *their* **(i)**

© Cambridge International Examinations 2014

5	**(a) (i)**	–2	**2**	**M1** for change in y / change in x for two correct points
	(ii)	$–2x + 3$	**1FT**	**FT** *their* gradient
	(b) (i)	6, 7, 6, –9	**3**	**B2** for 3 correct Or **B1** for 2 correct
	(ii)	8 points correctly plotted	**3FT**	**B2FT** for 6 or 7 points correctly plotted **B1FT** for 4 or 5 points correctly plotted
		Correct smooth curve	**1**	
	(iii)	–3.8 to –3.5 and 1.5 to 1.8	**2FT**	**B1FT** for one correct
	(c)	(1.6 to 1,9, –0.7 to –0.2) and (–1.9 to –1.6, 6.2 to 6.7)	**2FT**	**FT** intersection of line with *their* curve **B1** for one correct
6	**(a)**	$2x – 3$	**1**	
	(b)	$5x – 4$	**2**	**M1FT** for $2x – 3 + x + 2 +$ *their* $(2x – 3)$ oe
	(c) (i)	$4x + 4$	**2**	**M1** for $2 \times [3(x – 4) + 14 – x]$ oe
	(ii)	8	**2FT**	**FT** correct solution of *their* equation **M1FT** for *their* $(5x – 4) =$ *their* $(4x + 4)$
	(d)	12, 6	**2FT**	**B1FT** for each
	(e)	72	**1FT**	**FT** *their* length × width
7	**(a)**	10 12 20 14 18 34	**5**	**B4** for 5 correct **B3** for 4 correct **B2** for 3 correct **B1** for 2 correct
	(b) (i)	$2n + 4$ oe final answer	**2**	**B1** for $2n + k$ or $jn + 4$ $j \neq 0$
	(ii)	$4n + 2$ oe final answer	**2**	**B1** for $4n + k$ or $jn + 2$ $j \neq 0$
	(c)	B [by] 15 [tables]	**3**	**M1FT** for *their* $(2n + 4) = 66$ or *their* $(4n + 2) = 66$ and **A1FT** for $n = 31$ or $n = 16$

© Cambridge International Examinations 2014

8 (a) (i)	[Triangular] prism	**1**	
(ii)	Correct net	**3**	**B1** for 3 rectangles and two triangles, one on each side, even if incorrect sizes **B1** for three correct ruled rectangles **B1** for two correct ruled equilateral triangles
(iii)	109.86 **cao**	**1**	
(iv)	115 **cao**	**1**	
(b) (i)	70.7 or 70.68 to 70.695	**3**	**M2** for $\pi \times 1.5^2 \times 10$ Or **B1** for 1.5 seen Or **SC2** for answer 283 or 282.74 to 282.78
(ii)	37.7 or 37.69 to 37.704	**3**	**M2** for $\pi \times 3 \times 4$ Or **M1** for $\pi \times 3$
9 (a) (i)	Line $x = 1$ drawn	**1**	
(ii)	Correct reflection	**1FT**	**FT** reflection in their drawn line
(iii)	Correct rotation	**2**	**B1** for clockwise rotation 90° about origin or correct orientation incorrect position
(b) (i)	Translation $\begin{pmatrix} -3 \\ -4 \end{pmatrix}$	**B1** **B1**	Accept 3 left 4 down
(ii)	Enlargement [scale factor] 2 [centre] (6, 0)	**B1** **B1** **B1**	

© Cambridge International Examinations 2014