

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

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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 $[0 \times 4] + 1 \times 6 + 2 \times 5 + 3 \times 3 + 4 \times 5 + [5 \times 0] + 6 \times 2$ M1 dep for <i>their</i> $57 \div 25$	
2	(a) 249.75 cao	1	
	(b) $1080 \times 0.8 [= 864]$	1	Or $1080 - 1080 \times 0.2$
	(c) (i) 230.4[0]	2	M1 for $864 \div (9 + 4 + 2)$
	(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 <i>their</i> (d)(i) $\times 0.52 [= 254.15]$
	(e) (i) 12.5	1	
(ii) 172.93	3	M2 for $1225 \times 1.045^3 [= 1397.93]$ Or M1 for $1225 \times 1.045 \times 1.045$ seen	

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3	(a)	10	1		
	(b)	Before, steeper gradient oe	1		
	(c)	11 20	1		
	(d)	(i)	1 hour 48 minutes	2	M1 for $\frac{18}{10} [\times 60]$ oe
		(ii)	Correct ruled lines drawn	2	B1 line from (11 20, 18) to (12 10, 18) B1FT for line (<i>their</i> 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 – <i>their</i> (i)
	(iii)	320	1FT	FT 330 – <i>their</i> (ii)	
	(iv)	95	1		
	(v)	95	1FT	FT <i>their</i> (iv)	
	(vi)	55	1FT	FT 150 – <i>their</i> (iv)	
	(vii)	<i>BCE</i> and <i>GCF</i> or <i>BCD</i> and <i>GCH</i> or <i>CED</i> and <i>CFH</i>	1		
	(b)	(i)	30°	2	M1 for $360 \div 12$
		(ii)	150°	1FT	FT 180 – <i>their</i> (i)

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5	(a) (i)	-2	2	M1 for change in y / change in x for two correct points
	(ii)	$-2x + 3$	1FT	FT <i>their</i> gradient
	(b) (i)	6, 7, 6, -9	3	B2 for 3 correct Or B1 for 2 correct
	(ii)	8 points correctly plotted Correct smooth curve	3FT 1	B2FT for 6 or 7 points correctly plotted B1FT for 4 or 5 points correctly plotted
	(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 <i>their</i> curve B1 for one correct
6	(a)	$2x - 3$	1	
	(b)	$5x - 4$	2	M1FT for $2x - 3 + x + 2 + \textit{their} (2x - 3)$ oe
	(c) (i)	$4x + 4$	2	M1 for $2 \times [3(x - 4) + 14 - x]$ oe
	(ii)	8	2FT	FT correct solution of <i>their</i> equation M1FT for <i>their</i> $(5x - 4) = \textit{their} (4x + 4)$
	(d)	12, 6	2FT	B1FT for each
	(e)	72	1FT	FT <i>their</i> length \times 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 <i>their</i> $(2n + 4) = 66$ or <i>their</i> $(4n + 2) = 66$ and A1FT for $n = 31$ or $n = 16$

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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	