CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the October/November 2015 series
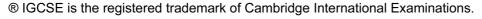
0580 MATHEMATICS

0580/11   Paper 1, maximum raw mark 56

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.

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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

Question		Answer	Mark	Part marks
1		$0.524 < 5.0204 < 5.024 < 5.204$	1	
2		[+]17	1	
3		r^4	1	
4	(a)	70	1	
	(b)	[0].375 cao final answer	1	
5	(a)	18.88 cao final answer	1	
	(b)	1.3	1	
6		$\begin{pmatrix} 13 \\ 9 \end{pmatrix}$	2	**B1** for $\begin{pmatrix} 12 \\ -6 \end{pmatrix}$ seen or **B1** for $\begin{pmatrix} 13 \\ k \end{pmatrix}$ or $\begin{pmatrix} j \\ -9 \end{pmatrix}$ as answer
7		Triangle (3, –2), (4, –2), (4, –1)	2	**B1** for movement 2 right or 3 down
8		628	2	**M1** for $\dfrac{785}{1+4}[\times 4]$
9		7 nfww	2	**M1** for 7.5 × 8 or for $(7 + 8 + 8 + y + 6 + 9 + 10 + 5) \div 8 = 7.5$ or better oe
10		$\dfrac{\sqrt{4} \times 30}{9-3}$ 10 nfww	**M1** **A1**	Allow one error and 2 for $\sqrt{4}$ and 6 for $9-3$

11	$\dfrac{2}{5} \times \dfrac{4}{3}$	M1	$\dfrac{2 \times 4}{5 \times 3}$
	$= \dfrac{8}{15}$ or equivalent fraction	A1	
12	14 nfww	3	**M2** for $(0.8 \times 6 + 2.2 \times 0.8)$ oe $\div 0.5$ oe or **M1** for $0.8 \times 6 + 2.2 \times 0.8$ oe If zero scored, **SC1** for *their* attempt at area $\div 0.5$ **and** **SC1** for any non-integer answer for *their* value $\div 0.5$ rounded up
13 (a)	84	1	
(b)	28	1	
(c)	Alternate	1	
14	156	3	**M2** for $180 - \dfrac{360}{15}$ or $\dfrac{180 \times (15-2)}{15}$ or $\dfrac{90 \times (2 \times 15 - 4)}{15}$ or **M1** for $\dfrac{360}{15}$ or $180 \times (15-2)$ oe
15 (a)	[0].21 oe	2	**M1** for $1 - ([0].15 + [0].22 + [0].18 + [0].24)$ or $100 - (15 + 22 + 18 + 24)$
(b)	[0].37 oe	1	
16 (a)	90	1	
(b)	8.29 or 8.289 to 8.29	2	**M1** for $\dfrac{OP}{11} = \tan 37°$ oe
17 (a)	Negative	1	
(b)	Single ruled line of best fit	1	
(c)	4000 to 5100	1	FT a single ruled line of negative gradient

18			31.4 or 31.36 to 31.37	3	**M2** for $\left[\dfrac{2}{2}\times\right]6.1\times\pi+2\times6.1$ oe or **B2** for 19.16 to 19.17 or 19.2 or **M1** for $6.1\times\pi$ or for $12.2\times\pi$
19	(a)		9.2	2	**M1** for $4\times2.6+3\times(-0.4)$ or better
	(b)		3.4	2	**M1** for one correct step in a 2-step method
20	(a)		27	1	
	(b)	(i)	2	1	
		(ii)	Ruled line from 14 55 to 15 40	2	**B1** for $\dfrac{3}{4}$ or 0.75 or 45 [min] or 15 40 or 3:40
21	(a)		348.6[0] cao final answer	1	
	(b)		805.31	3	**M2** for 750×1.024^3 oe or **M1** for $750\times1.024\times1.024$ oe If zero scored, **SC2** for answer of 55.31 or 55. 30[...], i.e. total interest
22	(a)	(i)	21	1	
		(ii)	48	1	
	(b)		$5n-3$ oe final answer	2	**B1** for $5n+a$ **or** $bn-3$ $(b\neq0)$

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