CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2014 series

0581 MATHEMATICS

0581/11   Paper 1 (Core), 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.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the May/June 2014 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

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.	Part	Answers	Mark	Part Marks
1		4	**1**	
2		23 29	**1**	
3	**(a)**	138	**1**	
	(b)	Obtuse	**1**	
4	**(a)**	506 000	**1**	
	(b)	5.06×10^5	**1FT**	Follow through *their* part (a)
5	**(a)**	$\dfrac{5 \times 2}{20}$	**1**	
	(b)	0.5 or $\dfrac{1}{2}$ cao	**1**	
6		30	**2**	**M1** for $n - 8 = 22$ or $\dfrac{n}{2} = 15$
7		$\begin{pmatrix} 6 \\ -13 \end{pmatrix}$	**2**	**B1** for each component or for $\begin{pmatrix} -2 \\ 10 \end{pmatrix}$ or $\begin{pmatrix} 2 \\ -10 \end{pmatrix}$ seen
8		454.5 455.5	**1, 1**	**SC1** for both correct but reversed
9		$18\,\dfrac{1}{18}$	**2**	**M1** for $\dfrac{2}{36} + \dfrac{36}{2}$ or better
10		1.37	**2**	**B1** for 0.866… or $\dfrac{\sqrt{3}}{2}$ or 0.5 or $\dfrac{1}{2}$ or **B1** for 1.366… as final answer
11		6	**2**	**M1** for $720 = 8 \times 15 \times h$ or better

12	(a)	Negative	1	
	(b)	More rain [suggests] lower temperature oe	1	
13		114 to 117	2	**B1** for 38 to 39 seen or 72 [mph]
14	(a)	74	2	**M1** Angle B = 180 – 127
	(b)	53	1FT	127 – *their* part (a)
15		1.6[0]	3	**M1** for 800 × 1.5 and **M1** for *their* 1200 ÷ 750
16	(a) (i)	p^{10}	1	
	(ii)	t^{-3} or $\dfrac{1}{t^3}$	1	
	(b)	4	1	
17	(a)	Angle [in a] semi-circle	1	
	(b)	19.2 or 19.23 to 19.24	2	**M1** for $17^2 + 9^2$

18	(a)	$\dfrac{16}{5}$ and $\dfrac{21}{8}$ oe	$\dfrac{8}{40}$ and $\dfrac{25}{40}$ oe	**M1**
		$\dfrac{128}{40} - \dfrac{105}{40}$ oe **or** $\dfrac{8 \times their\,16}{40} - \dfrac{5 \times their\,21}{40}$ oe with numerators evaluated	$\dfrac{40}{40} + \dfrac{8}{40} - \dfrac{25}{40}$ oe	**M1**
	(b)	$\dfrac{7}{8} \times \dfrac{40}{23}$ oe		**M1**
		$1\dfrac{12}{23}$ cao		**A1**
19	(a) (i)	40.3		1
	(ii)	−3.3		2 — **M1** for attempt at ordering seen
	(b)	$\dfrac{7}{12}$ oe isw		1

20	(a)	119	3	M2 for 18 × 6 + 11 oe or B1 for 18 or 11 or 108
	(b)	[0]1 [00] pm cao	1	
21	(a)	177 or 176.7 to 176.74	2	M1 for $\pi \times 7.5^2$
	(b)	4 correct lines of symmetry drawn	2	B1 for 2 correct and no extra lines
22	(a)	52.6	2	M1 for sin [ ] = $\dfrac{27}{34}$
	(b)	127 or 127.4[…]	2FT	180 – *their* part (a) B1 for [*BAC* =] 90 − *their* part (a)