UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2011 question paper

for the guidance of teachers

0581 MATHEMATICS

0581/13   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 must be read in conjunction with the question papers and the report on the examination.

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Abbreviations

cao	correct answer only
cso	correct solution only
dep	dependent
ft	follow through after error
isw	ignore subsequent working
oe	or equivalent
SC	Special Case
www	without wrong working

Qu.		Answers	Mark	Part Marks
1	(a)	10 073	1	
	(b)	13 + 20 – 2 = 31	1	Accept 20 seen with answer 31
2	(a)	32	1	
	(b)	3	1	
3		14 30 or (0) 2:30 pm	1	
		June 4th oe	1	
4		$2y(x - 2z)$	2	**B1** for $y(2x - 4z)$ or $2(xy - 2yz)$
5	(a)	<	1	
	(b)	<	1	
6		$(x =) 3(y - 5)$ oe final answer	2	**M1** for correct first move $y - 5 = \dfrac{x}{3}$ or $3y = x + 15$ **M1** for their correct second move
7	(a)	0	1	
	(b)	2	1	
8	(a)	$\begin{pmatrix} -2 \\ 1 \end{pmatrix}$	1	
	(b)	Point marked at (1, –1)	1	
9	(a)	21	1	
	(b)	27	1	
10		10.7 or 10.69(.…..) www	2	**M1** for $\dfrac{AC}{12} = \cos 27$ or better
11		7.94 or 7.937(…..) www	3	**M2** for $\sqrt{(12^2 - 9^2)}$ or **M1** for $12^2 = x^2 + 9^2$ oe or better

12 (a)	1.646×10^7	1	
(b)	3.32×10^{-2}	2	**B1** for 0.0332 seen or 3.3×10^{-2} as answer or **B1** for 3.32×10^k
13 (a)	36	1	
(b)	Correct working	2	**M1** for $\frac{7}{6}$ oe improper fraction **M1** for $\frac{12}{21} = \frac{4}{7}$ oe or visible cancelling
14 (a)	(0).55	1	
(b)	250	2	**M1** for 35 000 ÷ 140 or **SC1** for figs 25
15 (a)	67	1	
(b)	0.00304	1	
(c)	56.35	1	
16	$(x =)\ 5\ \ (y =) -1$	3	**M1** for consistent multiplication and add/subtract as appropriate. **A1** for 1 correct answer.
17 (a)	Reflex	1	
(b) (i)	Drawing of a trapezium	1	Ignore labels and no arrows as long as a reasonable sketch.
(ii)	Trapezium	1	
18	127.31 cao	3	**M1** for 120×1.03^2 **A1** for 127.308 If **M0** award **SC2** for 7.31 or 247.31
19 (a)	17	1	Allow −17
(b) (i)	−5.5	2	**M1** for $(-12 + -13 + -10 + 4 + 4 + -6)$ soi ÷ 6
(ii)	−8	2	**M1** for method of finding mid-value
(iii)	4	1	
20 (a)	Straight ruled line from (08 10, 200) to (08 30, 900)	1	
(b)	5	1	
(c)	1.8	4	**M1** for total distance ÷ total time **M1** for converting time to hours **M1** for converting metres to km