UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 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.

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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	25	1	
2	**(a)** 105 002	1	
	(b) 110 000	1ft	
3	$8x + 5y$ cao	2	**B1** $8x$ or $5y$ in final answer
4	**(a)** $7 \times (6 - 3) + 5$	1	
	(b) $8 - 6 \times (4 - 1)$	1	
5	$\dfrac{11}{21}$, 52.4%, 0.525, $\dfrac{111}{211}$	2	**M1** for conversion to decimals or %, allow 1 error 0.5238…, 0.524, 0.525, 0.526 or **B1** for 3 in correct order **SC1** correct but reverse order
6	8	2	**M1** for 240 or 0.3 seen or figs 24 ÷ figs 3
7	112	2	**M1** for $240 \div (7 + 8) \times 7$
8	**(a)** 211 cao	1	
	(b) 216 cao	1	
9	($)138	2	**M1** for 120×1.15 oe **SC1** answer 18
10	$(x =) -3$ $(y =) 5$	2	**M1** for correctly eliminating one variable
11	$(x =) 3.5$	2	**M1** for $2x - 3 = 2 \times 2$ or better $\dfrac{2x}{2} = 2 + \dfrac{3}{2}$
12	**(a)** 1.28×10^5	1	
	(b) 128 500	1	
13	882	2	**M1** $800 \times 1.05 \times 1.05$
14	$5h(g^2 + 2j)$	2	**B1** for $5(g^2h + 2hj)$ or for $h(5g^2 + 10j)$
15	298.79 cao	2	**M1** for $500 \div 1.6734$
16	$20x^9$ cao	2	**B1** for kx^9 or $20x^k$
17	130	2	**M1** for $26 \times 500\,000$ or 1 cm represents 5 km oe

18	$\dfrac{1}{9}, \dfrac{1}{4}$ $\left(\dfrac{1}{9}+\dfrac{1}{4}=\right)\dfrac{4}{36}+\dfrac{9}{36}=\dfrac{13}{36}$	**M1** **E1**	Both fractions seen Both fractions over a common denominator and added to give $\dfrac{13}{36}$
19	**(a)** 5 or –5	1	
	(b) –0.714 (–0.7143 to –0.7142) or $-\dfrac{5}{7}$	2	**M1** for $-2 + 2 + 1 - 3 - 1 - 2$ and $\div 7$
20	44.4 (44.36 to 44.38)	3 **www**	**M2** for $8 \times 8 - \pi \times 2.5^2$ or **M1** for $\pi \times 2.5^2$
21	**(a)** **(i)** 70	1	
	(ii) 64	1	
	(b) Kite	1	
22	**(a)** 0.0299 or 0.02992…	1	
	(b) 6.4×10^{13}	2	**B1** for 64×10^{12} or 64 000 000 000 000
23	**(a)** **(i)** B at (5, –2)	1	
	(ii) $\begin{pmatrix} 10 \\ -4 \end{pmatrix}$	1ft	
	(b) (–1, –4)	2ft	**B1**, **B1** follow through their B plotted
24	**(a)** ($DB =$) 9.75 or 9.746 to 9.747	3	**M2** for $\sqrt{\left(12^2 - 7^2\right)}$ or **M1** for $12^2 = 7^2 + x^2$ or better
	(b) (Angle $CAD =$) 32.6 or 32.57 to 32.58	2	**M1** for $\sin\dfrac{7}{13}$