

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 (b) 110 000	1 1ft	
3	$8x + 5y$ cao	2	B1 $8x$ or $5y$ in final answer
4	(a) $7 \times (6 - 3) + 5$ (b) $8 - 6 \times (4 - 1)$	1 1	
5	$\frac{11}{21}$, 52.4%, 0.525, $\frac{111}{211}$	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 $24 \div$ figs 3
7	112	2	M1 for $240 \div (7 + 8) \times 7$
8	(a) 211 cao (b) 216 cao	1 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 $\frac{2x}{2} = 2 + \frac{3}{2}$
12	(a) 1.28×10^5 (b) 128 500	1 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

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18	$\frac{1}{9}, \frac{1}{4}$	M1	Both fractions seen
	$\left(\frac{1}{9} + \frac{1}{4} =\right) \frac{4}{36} + \frac{9}{36} = \frac{13}{36}$	E1	Both fractions over a common denominator and added to give $\frac{13}{36}$
19	(a) 5 or -5	1	
	(b) -0.714 (-0.7143 to -0.7142) or $-\frac{5}{7}$	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 $\sqrt{(12^2 - 7^2)}$ 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 $\sin \frac{7}{13}$