MARK SCHEME for the May/June 2011 question paper

for the guidance of teachers

0580 MATHEMATICS

0580/11   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 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	847	1	
2	**(a)** 20 376	1	
	(b) 20 400	1ft	Their **(a)** to nearest 100
3	**(a)** 3	1cao	
	(b) 3	1	
4	**(a)** Trapezium	1	Do not allow Trapezoid
	(b) Parallelogram	1	
5	100	2	**M1** for $\frac{600}{5+1}$ (×1) If zero, **SC1** for answer of 500
6	124 or 123.8 or 123.83 to 123.92	2	**M1** for $\pi \times 6.28^2$
7	0.54	2	**M1** for $\dfrac{2.7 \times 20000}{100000}$ oe **or SC1** for figs 54 in answer
8	**(a)** 10	1	
	(b) 9	1	
9	22.5 oe	3	**B2** for $180 = 5x + 2x + x$ oe or better **B1** for $2x$ or $6x$ marked in the correct place on the diagram
10	$x = 13$ $y = -9$	3	**M1** for consistent multiplication and addition/subtraction. **A1** for $x = 13$ or **A1** for $y = -9$
11	$\dfrac{26}{12} - \dfrac{7}{12}$ or $2 - \dfrac{5}{12}$ oe	**M2**	**M1** for $\dfrac{13}{6} - \dfrac{7}{12}$ or $2\dfrac{2}{12} - \dfrac{7}{12}$ or $\dfrac{1}{6} - \dfrac{7}{12}$ oe
	$1\dfrac{7}{12}$ or $\dfrac{19}{12}$ oe	**A1**	
12	**(a)** 1738.3	1	
	(b) 2.87×10^4	1	
	(c) 6.5	1	

13	3245		3	**M1** for 3000×1.04^2 **A1** for 3244.8 If zero, **SC2** for answer of 245 If zero, **SC1** for their answer **corrected** to nearest dollar
14	**(a)** (0)8(.)01(am)		1	Not 8.01 pm
	(b) 78.4 or 78.38 to 78.39		3	**M2** for $827 \div 10.55$ **or M1** for figs $827 \div$ their time
15	**(a)** **(i)** 9		1	
	(ii) 15 03, 3.03pm		1	
	(b) **(i)** 7 or −7		1	
	(ii) 17		1	
16	**(a)** 84°		1	Check diagram
	(b) 10		1	
	(c) 60		1ft	ft their **(b)** × 6 where **(b)** is an **integer**
	(d) $\dfrac{96}{360}$ or $\dfrac{16}{60}$		1ft	ft $\dfrac{16}{\text{their } \mathbf{(c)}}$ oe where **(c)** is an **integer**
17	**(a)** $\begin{pmatrix} 6 \\ 2 \end{pmatrix}$		1	
	(b) C marked at (1, 2)		1	
	(c) $\begin{pmatrix} 4 \\ -3 \end{pmatrix}$		1	
	(d) $\begin{pmatrix} -12 \\ 4 \end{pmatrix}$		1	
18	**(a)** 66°		2	**M1** for 90° clearly identified as A
	(b) 114°		1ft	180 − their **(a)**
	(c) 33°		1ft	$\dfrac{180 - \text{their } \mathbf{(b)}}{2}$ or $\dfrac{\text{their } \mathbf{(a)}}{2}$
19	**(a)** **(i)** $x + 7$		1	
	(ii) $3x$		1	
	(b) **(i)** x+their **(a)(i)**+their **(a)(ii)**=32 or better		1ft	ft dependent on 2 algebraic expressions in **(a)**
	(ii) $(x =)$ 5		2ft	**M1** for $5x = 32 - 7$ oe **ft** their **(b)(i)** with M1 for $ax = b$ **and A1** if answer is an integer.
	(c) 12		1ft	**ft** their **(b)(ii)** substituted into their **(a)(i)** **or** their **(b)(ii)** + 7 evaluated correctly