UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2010 question paper for the guidance of teachers

0580 MATHEMATICS

0580/13 Paper 1 (Core), maximum raw mark 56

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UNIVERSITY of CAMBRIDGE
International Examinations

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	Pyramid	1	
2	1, 4, 25, 100	2	**B1** for any two and none incorrect. −1 each incorrect
3	**(a)** 2 **(b)** 2	1 1	
4	**(a)** 41 or −41 **(b)** −7	1 1	
5	$2x^2 + xy$ final answer	2	**B1** for $2x^2$ or xy seen in working
6	5.5	2	**M1** for $2x + 1 = 3 \times 4$ or better or $\frac{2x}{3} = 4 - \frac{1}{3}$
7	6.489	2	**B1** for 6.5 or 6.49 or 6.4891….
8	35	2	**M1** for $45 \div (7 + 2)$ **SC1** for answer = 10
9	46.4	2	**M1** for 32×1.45 oe or **B1** for answer of 14.4
10	$\frac{3}{16}$	2	**B1** for $\frac{1875}{10000}$ or any equivalent fraction.
11	$3a(c - 2d)$	2	**B1** for $a(3c - 6d)$ or $3(ac - 2ad)$ or $3a(jc - kd)$ where j and k are non-zero.
12	$\frac{8}{27}$	2	**M1** for $1 \div (1\frac{1}{2})^3$ oe or **SC1** for $\frac{27}{8}$
13	$(x =) 2$, $(y =) -1$	2	**M1** for correct method for eliminating one variable. Subtract or multiply by 3 and 5, then subtract

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14	**(a)** 17 **(b)** $\sqrt{17}$ or 4.12(….) **(c)** 0.294	1 1 1	
15	212.18 final answer cao	3	**M2** for 200×1.03^2 oe or **M1** for $(200 \times 1.03) \times 0.03$ oe
16	**(a)** 90 **(b)** 45 **(c)** 45	1 1ft 1ft	 ft $\frac{1}{2}$ (180 – their **(a)**) ft 90 – their **(b)**
17	**(a)** $(7 + 2) \times 9$ **(b)** $36 \div (6 \div 2) = 12$ **(c)** $5 \times (3 + 6) \times 2 = 90$	1 1 1	
18	**(a) (i)** $\begin{pmatrix}4\\5\end{pmatrix}$ **(ii)** $\begin{pmatrix}2\\-2\end{pmatrix}$ **(b) (AC) + (CB) = (AB)**	1 1 1	
19	$(y =) -\frac{1}{3}x + 2$ cao	3	**B1** for gradient of $\pm\frac{1}{3}$ oe (Allow ±0.33 or better) **B1** ind for $mx + 2$ where $m \neq 0$.
20	**(a) (i)** 4 **(ii)** $\frac{4}{5}$ oe **(iii)** $\frac{2}{5}$ oe **(b)** $\frac{2}{4}$ oe	1 1 1 1	
21	(Mode =) 0 (Median =) 2 (Mean =) 2.7	1 1 2	 **M1** (0 + 0 + 0) + 1 + 2 + 2 + 4 + 4 + 5 + 9

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22	**(a)** Lines connecting (08 00, home) to (08 10, shop) (their 08 10, shop) to (their 08 15, shop) (their 08 15, shop) to (08 30, school) **(b)** 1.65	3 2	 **B1** home to shop **B1**ft horizontal and 5 minute period **B1**ft for line to 08 30 and school **M1** for use of speed × time **SC1** for 1.375 or 1.376 to 1.38

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