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

0580 MATHEMATICS

0580/12 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	–2(°C)	**1**	
2	95.52	**1**	
3	35	**2**	**M1** for $4 \times 8 + 3$ or $4 \times 8\frac{3}{4}$ or $4 \times 8\frac{1}{2} + 1$ or $\frac{525}{15}$ or $\frac{510}{15} + 1$ **SC1** for answer 34
4	$\frac{9}{8} < 115\% < 1\frac{1}{6} < 1.2$	**2**	**M1** for all decimals (or %), allow 1 error or **B1 for 3 in correct order** eg $115\% < \frac{9}{8} < 1\frac{1}{6} < 1.2$ **SC1** for reverse order
5	7.5	**2**	**M1** for $12 \times 5 \div (1 + 5 + 2)$ oe
6	4.58 cao	**2**	**B1** for 4.6(0) or 4.57 or 4.579 or 4.578 or 4.5789 or 4.5788… **SC1** for 4.58^3 only
7	**(a)** 7.34×10^8 **(b)** 5.87×10^{-4}	**1** **1**	
8	399 500 ($\leq P <$) 400 500	**1, 1**	**SC1** for both correct reverse order
9	**(a)** 6.25 cao **(b)** 0.16 cao	**1** **1**	
10	**(a)** ($x =$) 20 **(b)** ($y =$) 65	**1** **2**	 **B1** for $ABD = 65°$ or $ADB = 95°$
11	**(a)** $x + 2x + 2x + 75 = 360$ **(b)** ($x =$) 57 cao	**1** **2**	Allow $4x + x + 75 = 360$ or $5x + 75 = 360$ or $5x = 285$ **M1** correct first step after $5x + 75 = 360$ ie $5x = 360 - 75$ or $x + 15 = 72$ If zero **SC1** for correct solution to their linear equation seen in part **(a)** or in part **(b)** if **(a)** is blank

12	$2\frac{1}{12}$ cao **with correct working**	**3**	**M1** (1+)$\frac{6}{12}+\frac{4}{12}+\frac{3}{12}$ oe **A1** (1)$\frac{13}{12}$ or $\frac{2}{12}$
13	$(x=)$ 3 $(y=)$ –1 www	**3**	**M1** for consistent multiply and consistent add/ subtract as appropriate Allow computational but not method errors Likely $5x + 4x = 17 + 10$ Other methods allowed **A1** for correct x or y
14	**(a)** 13 (Red)$\frac{19}{60}$ (Yellow)$\frac{\text{their } 13}{60}$ oe (Blue)$\frac{28}{60}$ oe **(b)** Blue	**1** **1ft** **1ft**	All needed for the mark isw cancelling or decimals after correct fractions seen **Strict** ft their highest frequency
15	11.3	**3**	**M2** 22 × 1.852 × 1000/3600 oe or **M1** 22 × figs 1852 or 22 × 1000/3600
16	**(a)** Any multiple of 56 **(b)** **(i)** 3, 9, 27 (in any order) **(ii)** 3 cao	**1** **2** **1**	 **B1** for 2 correct
17	**(a)** $y = –2$ or $y + 2 = 0$ **(b)** **(i)** Ruled line parallel to **B** through (0, 2) **(ii)** $(y=)$ $3x + 2$ cao final answer	**1** **1** **2**	 Must at least go through (–1, –1) **B1** $3x + j$ $j \neq -1$ or 2 or $kx + 2$ $k \neq 3$ **SC1** for $3x + 2$ then spoiled by the final answer
18	**(a)** 30 **(b)** **(i)** 12 **(ii)** 150 cao	**1** **2ft** **1**	 **M1** for 360 ÷ their **(a)** (Any answer for **(a)** for method) Only ft for **A1** if 360 ÷ their **(a)** is an integer Other methods allowed if complete
19	**(a)** **(i)** (1, 5) **(ii)** D at (5, 2) **(iii)** Lines $x = 3$ and $y = 3.5$ only drawn **(b)** Kite Trapezium	**1** **1** **1** **1, 1**	 Dep on **(a)(ii)** Extra line(s) zero Lines should at least meet the sides 1 mark for each
20	**(a)** Petrol cao **(b)** 72 **(c)** $\frac{1}{10}$	**1** **2** **2**	 **M1** for 360 × 12 ÷ 60 **B1** $\frac{6}{60}$ or $\frac{3}{30}$ or $\frac{2}{20}$ or 0.1 or 10%