UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2010 question paper

for the guidance of teachers

0580 MATHEMATICS

0580/12 Paper 12 (Core), maximum raw mark 56

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Qu.	Answers	Mark	Part Marks
1	119	1	
2	**(a)** 24	1	
	(b) (24), 48, 72, 96	1	**SC1** for ans (48), 96 if their **(a)** is 48.
3	$3p(2m - 3q)$ final answer	2	**W1** for $3(2mp - 3pq)$ or $p(6m - 9q)$ or $3p(am \pm bq)$ where a and b are integers.
4	$\frac{7}{20}$ or equivalent fraction isw www	2	**M1** for $\frac{2\times4}{4\times5}+\frac{5\times1}{4\times5}$ or $\frac{8}{20}+\frac{5}{20}$ or 0.4 + 0.25 or $1-\frac{8}{20}-\frac{5}{20}$ or 1 – 0.4 – 0.25 or 40 + 25 or 400 + 250 or 1000 – 400 – 250 seen If **M0** then **SC1** for $\frac{7}{20}$ with no, incomplete or wrong working. Condone if followed by 0.35 or 35%
5	**(a)** 22 10, 22:10, 22.10, 10 10pm	1	
	(b) 11(h) 35(min)	1**ft**	Follow through time period from their **(a)** to 09 45
6	1904	2	**M1** for 400 × 4.76
7	66.5	2 cao	**W1** for figs 665 **or SC1** answer of 66.5 < LB < 67.5
8	$(\pm)\sqrt{(m + 2)}$ final answer	2	**W1** for $p^2 = m + 2$ or ft square root after incorrect first step(s). **SC1** answer of $(\pm)\sqrt{m} + 2$
9	**(a)** (0)34 to (0)36	1	
	(b) 286 to 289	1	
10	**(a)** 6	1	
	(b) 520	2	**M1** for $5 \times 10^2 - 10 \times -2$, or better If zero, **SC1** for answer of 480 or 2520
11	**(a)** Line of fit by eye	1	
	(b) Negative	1	
	(c) Older children run faster	1	
12	**(a)** –3	1	
	(b) **(i)** p^5	1	
	(ii) m^{-4} or $\frac{1}{m^4}$	1	

13	**(a)** 0.08259(…..)	1	
	(b) 8.26×10^{-2}	2**ft**	**W1** for their figs 826, i.e. to 3 sig figs **(a)** must have a minimum of 4 figures in order to qualify for this mark. or **W1 ind** for their **(a)** in standard form.
14	$(x) = 7$, $(y) = 3$, www	3	**M1** for multiplying and subtracting or adding as appropriate. (allow errors in arithmetic operations) or any other correct methods **A1** for one correct variable.
15	Rectangle width 1.5 cm. Rectangle width 1 cm. Accurately drawn cross-section piece	1 1 1	in a correct place in a correct place in a correct place
16	(\$)282.56(…)	3	**M1** for 2500×1.055^2 oe 2782(. ...) **and M1 dep** for subtracting 2500
17	**(a)** D	1	
	(b) E	1	
	(c) G	1	
	(d) F	1	
18	**(a)** Translation $\begin{pmatrix} 7 \\ -6 \end{pmatrix}$	2	**W1 cao** for translation (allow poor spelling) **or W1** independent for correct vector alone.
	(b) Correct rotation (4, 4), (5, 4), (5, 2) and (2, 4)	2	**W1** for (2, 4) missed but other points correct **or SC1** for 90 anti-clockwise rotation **or SC1** correct rotation, any other centre
19	**(a)** 98.1 or 98.13 to 98.14	3	**M1** for 14×6 (+……) **M1 ind** for $\pi \times 3^2 \div 2$
	(b) 19.6 or 19.62 to 19.63	2**ft**	**M1** for their **(a)** × figs 2 Figs 196…. implies **M1**
20	**(a)** Two parallel straight lines 7 cm long and 4 cm from *AB* **and** two semicircular ends 4 cm from *A* and from *B*.	2	**W1** for 2 correct lines or 2 semicircles.
	(b) 391 or 391.3 to 391.4	3 **cao**	**M1** for 2×70 soi and **M1** ind for $2 \times \pi \times 40$ **SC2** for answer of 39.1 or 39.13 to 39.14