UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2012 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.

- Cambridge will not enter into discussions or correspondence in connection with these mark schemes.

Cambridge is publishing the mark schemes for the May/June 2012 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

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
soi seen or implied

Qu	Answers	Mark	Part marks
1	87.5	**1**	
2 (a)	Equilateral	**1**	
(b)	3	**1**	
3	532	**2**	**M1** for 5(h)33(min) + 3(h)19(min)
4	495.36	**2**	**M1** for 700 ÷ 1.4131
5	21	**2**	**M1** for $2 \times 3 - 5 \times (-3)$ or better **or B1** for 6 **and** –15 i.e. both terms evaluated
6	$0.85b + 7.5n$ **OR** $\frac{85n + 750n}{100}$ final answer	**2**	**B1** for $0.85b$ **OR** $7.5n$ seen
7 (a)	Rhombus	**1**	
(b)	131°	**1**	
8	2.25 oe	**2**	**M1** $4x = 7 + 2$ **OR** $x - \frac{2}{4} = \frac{7}{4}$ or better
9 (a)	30	**1**	
(b)	18.5	**1**	
10	23.2	**2**	**M1** for $\sin 53.2 = \frac{x}{29}$ implicit form or better
11 (a)	1, 3, 5, 15	**1**	
(b)	$3p(5p + 8t)$ final answer	**2**	**B1** for answer of $3(5p^2 + 8pt)$ or $p(15p + 24t)$ **or SC1** for correct answer seen in working

12	Triangle drawn correctly with ruler **and** arcs	**3**	**M1** for one side drawn to correct length **and M1** for clear method of crossing arcs even if wrong scale or inaccurate
13	843.75	**3**	**M2** for $\frac{750 \times 5 \times 2.5}{100} + 750$ oe **or M1** for $\frac{750 \times 5 \times 2.5}{100}$ oe **or SC2** for answer 93.75
14	$\frac{55}{30} + \frac{27}{30}$ oe **or** (1)$\frac{25}{30} + \frac{27}{30}$ oe $\frac{82}{30}$ oe **or** (1)$\frac{52}{30}$ oe $2\frac{11}{15}$ **M2** must be scored	**M1** **M1** **A1**	for denominator of $30k$ for denominator of $30k$ dependent on previous **M1** If **M0** scored then **SC1** for common denominator of $30k$ seen
15 (a)	51°	**1**	
(b)	90°	**1**	
(c)	66°	**1**	
16	$x = -7$ $y = 9$	**3**	**M1** for consistent multiplication and addition/ subtraction as appropriate. Allow computational errors **A1** for $x = -7$ **or** $y = 9$
17 (a)	(–1, 2)	**1**	
(b)	$\begin{pmatrix} 4 \\ -5 \end{pmatrix}$	**1**	
(c)	(1, 5)	**1**	
18 (a)	330	**1**	
(b)	1000 **or** 1×10^3	**2**	**B1** for 1000000 **or** 1×10^6 **or** 10^6 seen
(c)	46.3	**1**	

19	**(a)**	$9p - 4q$ final answer	**2**	**SC1** for answer of $9p \pm jq$ **OR** $\pm kp - 4q$ j, k are integers **or** for continued work after correct answer
	(b)	$x = \frac{g - y}{2}$ oe	**2**	**M1** for correct first step **i.e. either** $g - y = 2x$ oe **OR** $\frac{g}{2} = x + \frac{y}{2}$ **or SC1** for answer $x = \frac{y - g}{2}$
20	**(a)**	Perpendicular bisector drawn with 2 pairs of <u>arcs</u> **and** <u>ruled</u>	**2**	**SC1** for a ruled perpendicular without arcs or only one pair **or** 2 pairs of correct arcs with no line drawn
	(b)	Circle drawn radius 4cm	**1**	
	(c)	Correct region shaded	**1**	**Dependent** on **SC1** in **(a)** and an arc, radius 4cm in **(b)** to enclose correct area
21	**(a)** **(i)**	18	**1**	
	(ii)	17	**2**	**M1** for clear attempt to find the middle number
	(b)	21	**1**	