

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**

**0580/33**

Paper 33 (Core), maximum raw mark 104

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.

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

CIE is publishing the mark schemes for the May/June 2010 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.



<b>Page 2</b>	<b>Mark Scheme: Teachers' version</b>	<b>Syllabus</b>	<b>Paper</b>
	<b>IGCSE – May/June 2010</b>	<b>0580</b>	<b>33</b>

### 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
art	anything rounding to
soi	seen or implied

Qu.	Answers	Mark	Part Marks
<b>1 (a)</b>	1750	2	M1 $\frac{7}{4+7} \times 2750$ oe
<b>(b)</b>	660	2	M1 $\frac{24 \times 2750}{100}$
<b>(c)</b>	$\frac{3}{25}$	2	W1 for equivalent fractions
<b>(d)</b>	3135 cao	3	M2 $\frac{114}{100} \times 2750$ oe If M0 then M1 for $\frac{14}{100} \times 2750$ or 385 seen
<b>(e)</b>	9475	1	cao
<b>(f)</b>	$3.5 \times 10^4$	1	cao
<b>2 (a) (i)</b>	Any 5 multiples of 7	2	-1 each error or omission
<b>(ii)</b>	Two multiples of 28	2	W1, W1
<b>(b) (i)</b>	25	1	cao
<b>(ii)</b>	17	1	cao
<b>(c)</b>	4	1	cao
<b>(d)</b>	$(k =) 2, (m =) 19$	2	W1, W1

Page 3	Mark Scheme: Teachers' version	Syllabus	Paper
	IGCSE – May/June 2010	0580	33

<b>3 (a)</b>	3, 5, -1	3	1 each
<b>(b)</b>	7 points plotted reasonable freehand curve	P3ft C1	P2 for 5 or 6 points, P1 for 3 or 4 points
<b>(c)</b>	-1.3, 2.3 <u>strict ft</u> their intercept with $y = 2$	2ft	W1 for either
<b>(d) (i)</b>	-7, -1, 5	2	W1 for 2 correct
<b>(ii)</b>	Correct ruled line	2	SC1 for freehand line, or ruled short line crossing curve twice Or their 3 points plotted
<b>(iii)</b>	2	1	cao
<b>(e)</b>	(-3, -7) and (2, 3)	2ft	1 for either
<b>4 (a)</b>	$(x =) 7.5$	3	W1 for correct bracket expansions M1ft for collecting their terms correctly
<b>(b)</b>	$(f =) \frac{g+5}{7}$	2	M1 for one correct step seen
<b>(c)</b>	$2y(3x - 5z)$	2	W1 for $2(3xy - 5yz)$ or $y(6x - 10z)$ or $2y(ax + bz)$ where $a$ and $b$ are integers
<b>5 (a)</b>	Congruent	1	cao
<b>(b)</b>	$36^\circ$ or $36.0^\circ$ art	2	M1 for $\tan \text{ angle} = \frac{8}{11}$
<b>(c) (i)</b>	20	2	M1 for $\frac{1}{2} \times 5 \times (5 + 3)$ oe
<b>(ii)</b>	40	1ft	ft is $2 \times$ their <b>(c)(i)</b>
<b>(d)</b>	14	3	W1 for $x + x + x + 3 + x + 3 = 62$ o.e. M1ft for correct first step but must be from a linear equation $ax + b = k$

<b>Page 4</b>	<b>Mark Scheme: Teachers' version</b>	<b>Syllabus</b>	<b>Paper</b>
	<b>IGCSE – May/June 2010</b>	<b>0580</b>	<b>33</b>

<b>6 (a)</b>	Point $C$ constructed with arcs, $AC = 11$ cm $BC = 9$ cm	2	W1 if correct without arcs
<b>(b)</b>	$46^\circ$	1ft	
<b>(c) (i)</b>	Bisector of angle $ABC$ with 4 correct arcs and reaches $AC$	2ft	W1 if accurate without arcs or accurate with arcs and short
<b>(ii)</b>	Perpendicular bisector of $AC$ , with correct arcs	2ft	W1 if accurate without arcs
<b>(d) (i)</b>	0.7 to 0.8 cm	1ft	ft their $PQ$ provided on their $AC$
<b>(ii)</b>	Region of triangle between their constructions	1	dep on W1 and W1 in <b>(c)(i)</b> and <b>(c)(ii)</b>
<b>(e)</b>	500	2	W1 for figs 5 or 9 and 4500 oe seen
<b>7 (a) (i)</b>	21	1	cao
<b>(ii)</b>	33	1	cao
<b>(iii)</b>	$4n + 1$ oe	2	W1 for $4n + j$ or $kn + 1$ , where $k$ not equal to zero, seen
<b>(b) (i)</b>	40	1	cao
<b>(ii)</b>	3	2	W1 for embedded answer or M1 for $1(1 + p) = 4$ oe
<b>(iii)</b>	10300	1ft	ft is $100 \times (100 + \text{their } p)$ evaluated
<b>8 (a) (i)</b>	$\frac{19}{50}$	1	Accept 0.38 or 38%
<b>(ii)</b>	$\frac{29}{50}$	1	Accept 0.58 or 58%
<b>(iii)</b>	$\frac{40}{50}$ oe	1	Accept 0.8 or 80%
<b>(iv)</b>	0	1	Accept $\frac{0}{50}$ , 0%, nil or zero
<b>(b)</b>	50 or all	1	

<b>Page 5</b>	<b>Mark Scheme: Teachers' version</b>	<b>Syllabus</b>	<b>Paper</b>
	<b>IGCSE – May/June 2010</b>	<b>0580</b>	<b>33</b>

<b>9 (a)</b>	67	2	M1 their $469 \div 7$
<b>(b)</b>	62	1	cao
<b>(c)</b>	Correct labelled vertical scale Bars equal width (with consistent/without gaps), or lines All 7 bars/lines correct height	1 1 3ft	W2ft for 5 or 6 bars correct, W1ft for 3 or 4
<b>10 (a)(i)</b>	325.65	2	M1 for $500 \times 0.6513$ soi
<b>(ii)</b>	460.62 or 460.61	3	M1 for $300 \div 0.6513$ A1 for 460.6 or 461 or 460.617.... W1 <b>indep</b> for their visible answer <u>corrected</u> to 2dp
<b>(b)</b>	349.70	3	M1 for $\frac{325 \times 2 \times 3.8}{100}$ or 24.7(0) M1dep for their interest added to 325
<b>(c)</b>	617.98	3	M2 for $550 \times 1.06^2$ or M1 for $550 \times 1.06$ oe and M1 dep for second year Penalise accuracy only once in the question
<b>11 (a)(i)</b>	Reflection in the $x$ -axis (or $y = 0$ )	1, 1	
<b>(ii)</b>	Rotation, about origin, $90^\circ$ (anti-clockwise)	1, 1, 1	Accept (0,0) or $O$ Accept (+) $90, -270, \frac{1}{4}$ turn
<b>(b)(i)</b>	Correct translation	2	W1 for correct shape and orientation translated by $\begin{pmatrix} 6 \\ 0 \end{pmatrix}$ or $\begin{pmatrix} 0 \\ 4 \end{pmatrix}$ or $\begin{pmatrix} 4 \\ 6 \end{pmatrix}$
<b>(ii)</b>	Correct enlargement	2	W1 for correct orientation and size but wrong position