UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2008 question paper

0580 and 0581 MATHEMATICS

0580/11 and 0581/11 Paper 11 (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.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes must be read in conjunction with the question papers and the report on the examination.

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	IGCSE – October/November 2008	0580 and 0581	11

Abbreviations

cao correct answer only
ft work has been followed through after an error
isw ignore subsequent working
oe or equivalent
SC Special Case
soi seen or implied
ww without working

Qu.	Answers	Mark	Part Marks
1	28	1	
2	2	1	
3	–13	1	
4	6.5	1	
5	$12 - 13x$ cao final answer	2	W1 for (+)12 or $-13x$ seen anywhere
6	11.5	2	M1 for 4.6 × figs 25 or W1 for figs 115
7 (a) (b)	> =	1 1	
8	15.77 cao	2	M1 for 20 ÷ 1.2685 or W1 for answers from 15 to 17
9	(x=) 10.2 or $10\frac{1}{5}$ isw	2	M1 for (53 – 2) ÷ 5 soi
10	$6650 \leq L < 6750$	1, 1	1 mark for each value correctly placed. SC1 both correct but reversed
11 (a) (b)	12 24	1 1	
12	(k=) 8	2	M1 for $0 = 2 \times 4 - k$ or better
13 (a) (b) (c)	5.78×10^{-3} 0.0058 0.01	1 1 1	 Accept 5.8×10^{-3} Accept 1×10^{-2}
14	$\frac{15}{4}$ seen $\frac{5}{8} \times$ their $\frac{4}{15}$ $\frac{1}{6}$	W1 M1 A1	 Must be inversion of an improper fraction Can be implied by $\frac{5}{8} \div '\frac{15}{4}' = '\frac{20}{120}'$. ww no marks

Qu.	Answers	Mark	Part Marks
15 (a)	Point marked at (3, 2)	1	Missing label not penalised.
(b)	(–2, 1)	1	More than 1 point seen, must be labelled
(c)	–0.5 or $-\frac{1}{2}$	1	By eye 2mm
16 (a)	1	1	
(b)	q^{11}	1	
(c)	r^{-6} or $\frac{1}{r^6}$	1	
17 (a)	12 seen on diagram at ***A and B*** or $180^o - 168^o = 12^o$. **AND** 12 + 78 (= 90)	1	Allow $168^o + 12^o = 180^o$ only Allow $90^o - 78^o = 12^o$ or $90^o - 12^o = 78^o$ if the first condition is satisfied
(b)	123^o	2	W1 for angle *BAC* (or angle *BCA*) = 45^o
18 (a)	1083300 to 1084000 or 1080000 or 1083000 Final answer	2	M1 for $\pi \times 50^2 \times 138$ or $\pi \times 0.5^2 \times 1.38$
(b)	Their **(a)** ÷ 10^6 evaluated	1ft	
19 (a)	64	2	M1 for 2 × (10 + 22) or 22 + 10 + 14 + 6 + (22 – 14) + (10 – 6)
(b)	172	2ft	M1 for (22 × 10) – 6 × '8' or (140 × 10) + '8' × '4' or 14 × 6 + 22 × '4'
20 (a)	15(%) or 0.15 or $\frac{15}{100}$ oe	1	isw for change of form or cancelling only in all parts. Not ratio.
(b) (i)	$\frac{4}{15}$ oe cao	1	Allow 0.267 or 0.266(6….) or % form Minimum 3 significant figures
(ii)	$\frac{10}{15}$ oe cao	1	Allow 0.667 or 0.666(6…) or % form Minimum 3 significant figures Consistent use of wrong denominator in all of **(b)**, –1 once.
(iii)	0 or $\frac{0}{15}$ cao	1	Allow nil, none or zero only. No other denominator allowed.
21 (a)	Similar	1	
(b)	15	2	M1 for 10 ÷ 8 × 12 or equivalent method
(c)	292	2	M1 for 360 – 68
22 (a)	45	1	
	5	1	
	75	1ft	Their '5' × 15 or 120^o – '45'
(b)	All sectors correct ± 2°	1ft	Ft provided angles total 360°
	'Correctly' labelled	1	Independent. Labelling of the other 3 sectors.