CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the November 2004 question papers

0580/0581 MATHEMATICS

0580/01, 0581/01   Paper 1 (Core), maximum raw mark 56

This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which Examiners were initialy instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began. Any substantial changes to the mark scheme that arose from these discussions will be recorded in the published *Report on the Examination*.

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*.

*   CIE will not enter into discussion or correspondence in connection with these mark schemes.

CIE is publishing the mark schemes for the November 2004 question papers for most IGCSE and GCE Advanced Level syllabuses.

Grade thresholds taken for Syllabus 0580/0581 (Mathematics) in the November 20 examination.

	maximum mark available	minimum mark required for grade:			
		A	C	E	F
Component 1	56	N/A	40	28	23

The threshold (minimum mark) for B is set halfway between those for Grades A and C.
The threshold (minimum mark) for D is set halfway between those for Grades C and E.
The threshold (minimum mark) for G is set as many marks below the F threshold as the E threshold is above it.
Grade A* does not exist at the level of an individual component.

TYPES OF MARK

Most of the marks (those without prefixes, and 'B' marks) are given for accurate results, drawings or statements.

- **M** marks are given for a correct method.

- **B** marks are given for a correct statement or step.

- **A** marks are given for an accurate answer following a correct method.

ABBREVIATIONS

a.r.t.	Anything rounding to
b.o.d.	Benefit of the doubt has been given to the candidate
c.a.o.	Correct answer **only** (i.e. no 'follow through')
e.e.o.	Each error or omission
f.t.	Follow through
o.e.	Or equivalent
SC	Special case
s.o.i.	Seen or implied
ww	Without working
www	Without wrong working
	Work followed through after an error: no further error made

November 2004

INTERNATIONAL GCSE

MARK SCHEME

MAXIMUM MARK: 56

SYLLABUS/COMPONENT: 0580/01, 0581/01

MATHEMATICS

Paper 1 (Core)

Number	Answers	Mark	Notes
1	17	1	Not -17
2	(10 - 5) x (9 + 3)	1	Ignore omission of final bracket only
3	0.56	2	B1 for 5 ÷ 9 or digits 55 (….) or digits 56 Common answer for B1 is 0.55
4	**(a)** 100 **(b)** 400	1 1	
5	1.5 (0...)	2	M1 for $\dfrac{5}{(4+3+5)}$ x 3.6 SC1 for 1.2 or 0.9 (ie. Wrong ingredient)
6	**(a)** 270 **(b)** (0)45	1 1	
7	Obtuse Reflex	1 1	
8	$\begin{pmatrix} 5 \\ 0 \end{pmatrix}$	1 + 1	One mark each component. If only number 5 in bracket allow 1 mark. If 0 scored SC1 for $\begin{pmatrix} -2 \\ 4 \end{pmatrix}$ or $\begin{pmatrix} 2 \\ -4 \end{pmatrix}$ seen, or $\begin{pmatrix} 0 \\ 5 \end{pmatrix}$ Ignore a line between Components
9	$\dfrac{3}{5} \times \dfrac{10}{7}$ $\dfrac{30}{35} = \dfrac{6}{7}$ or $\dfrac{3 \times 2}{1 \times 7} = \dfrac{6}{7}$	M1 E1	Only acceptable method.

10	(a) a^7	1	
	(b) b	1	Allow b^1
11	(a) <	1	
	(b) =	1	
12	(a) 3	1	Ignore any added words
	(b) 2	1	
13	Net of the pyramid. A square with 4 equal isosceles triangles correctly positioned.	2	1 for a square 1 for all 4 triangles, isosceles or equilateral. Reasonable accuracy by eye. Ignore any tabs shown.
14	16.66 cao	3	M1 for 0.15 x 19.60 (implied by 2.94 seen) M1 for 19.60 – his 2.94 (allow if 2.94 is rounded to 2.90, method only) or M2 for 0.85 x 19.60 [allow for (1 – 0.15) x 19.60] Answer 1666 2 marks, 1670 1 mark ww. 16.7(0) implies M2
15	24500	3	M1 for 350 x 350 x 200 or 3.5 x 3.5 x 2 soi A1 for 24500000 or 24.5 seen B1 for his 'volume' correctly converted to litres.
16	(a) (i) (base) = 7.5	1	Allow 2 marks for correct answers reversed.
	(ii) (height) = 5.5	1	Allow 1 mark for one of the answers seen in either (i) or (ii). A correct calculation of the area using his values of base and height regardless of his values.
	(b) 20.6 (25) or 20.62 or 20.6 (3) f.t.	1	
17	(a) 1018	1	
	(b) 89.38 final answer ft.	2	M1 for his (a) x 8.78 soi or SC1 for answer in cents.

18	(a) 1,2,3,5,6,10,15,30 cao or 1 x 30, 2 x 15, 3 x 10, 5 x 6 cao (b) 2,3,5 or 2 x 3 x 5	2 1f.t.	B1 for 4 correct factors, **none incorrect**. **All** the correct primes from his part (a), and at least one prime and no non-primes.
19	(a) 6 (hours) 45 (minutes) (b) rounds to 52.6 or $52\frac{16}{27}$	1 3f.t.	B1 for 6.75 or $6\frac{3}{4}$ oe used or his time correctly converted to hours. M1 for 355 ÷ his time. (any form) (55.0…or 0.87….ww implies M1) A1 f.t. provided his (a) correctly converted to hours.
20	(a) 10 (b) $\frac{4}{35}$ oe or 0.114 (...) or 11.4%	2 2	M1 for $\frac{2}{7}$ x 35 M1 for $1 - \left(\frac{2}{7}+\frac{3}{5}\right)$ soi or [35 - (his (a) + $\frac{3}{5}$ x 35] ÷ 35 0.11 or 11% seen imply M1
21	(a) 2.34×10^3 (b) 1.26×10^6	2 2	SC1 for figs 234 seen or 2.3×10^3 SC1 for figs 126 seen or 1.3×10^6
22	(a) diameter (b)(i) rounds to 30.8 or 30.9 (ii) rounds to 56.5 or 56.6	1 2 2	M1 for $0.5 \times \pi \times 12$ or $12 + \pi \times 12$ (implied by rounding to18.8 or 18.9 or 49.7 seen) M1 for using $\pi \times 6^2$ (implied by 113 (.) seen