MARK SCHEME for the May/June 2012 question paper

for the guidance of teachers

0607 CAMBRIDGE INTERNATIONAL MATHEMATICS

0607/32 Paper 3 (Core), maximum raw mark 96

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.



	Page 2	Mark Scheme: Teachers' v	ersion	Syllabus	Paper	
		IGCSE – May/June 20 ⁴	0607 32			
_						
1	(a)	A, B, C, D, K, L, M	1			
	(b)	6	1			
	(c)	10%	2	M1 for 2/20 seen		
	(d)	$\frac{5}{20}$ oe isw any cancelling or converting	1			
	(e)	$\frac{6}{13}$ o.e isw any cancelling or converting (0.462 or 0.4615)	1			[6]
		(0.102 01 0.1015)				ניין
2	(a) (i) (ii)	7000 ÷ 100 × 33 Mr Ray \$2450, Dr Surd \$2240	M1 M1 B1 B1	or M1 for 2310 and 70 (allow 231 and 700 ÷ 7 33 : 100		
	(b)	105	1			
	(c)	920 ft	1ft	<i>their</i> 2240 – 1320, ft p	ositive answers on	ly
	(d)	1715 ft	2ft	M1 for 70/100 × <i>their</i>	2450 oe	[8]
3	(a)	x = -1, y = 2 with working	3	M1 for attempt to get 2 elimination. Condone of OR M1 for equations in the Condone one numerica OR M1 for sketch. A1 each answer Trial and improvement correct scores 3, otherw SC1 for correct answer	one numerical slip. e form $y = \text{ or } x = .$ ll slip. with both answer vise 0.	rs
	(b) (i)	$2\pi r(r+h)$ final answer	2	M1 for any correct par $2\pi r($)	tial factorisation or	r
	(ii)	$h = \frac{s - 2\pi r^2}{2\pi r}$ or final answer	2	M1 for correct re-arrar M1 for correct divisior	-	
	(c)	6 <i>x</i> ³	2	B1 for kx^3 or $6x^k$		[9]

	Page 3				Syllabus	Paper	
		IGCSE – May/June 201	2		0607	32	
-			1	1			
4	(a)	Points plotted correctly	B1B1				
	(b)	(3, 5)	1				
	(c)	$\begin{pmatrix} 2\\4 \end{pmatrix}$	1	con	done poor notation		
	(d)	2 oe	2		for change in <i>y</i> ove ow 4/2	r change in <i>x</i> .	
	(e)	2 ft	1ft	ft (l) only		
	(f)	y = 2x - 7 oe	2ft		for $y = their 2x + c$ for substituting (5, 3)		[9]
5	(a) (i)	24	1				
	(ii)	56 – 57 kg	1				
	(iii)	9 (allow +/- 0.5) www	2	M1	for 59 (+/- 0.5) or	50 to 51 seen	
	(b)	$\frac{8}{24}$ or $\frac{9}{24}$ oe ft	2ft	M1	for 8 or 9 seen ft fr	om (a)	[6]
6	(a) (i)	trapezium	1				
	(ii)	51	1				
	(iii)	82	1				
	(iv)	129	1				
	(b)	108	3		for 540/5 seen or 1 for $(5-2) \times 180$ of		[7]

10 (a) Diagram 10 (a) Diagram (b) (0)51.8 accept (0)52 but only with working 4 M1 for recognizing the 90 angle – may be marked on diagram. M1 for tan = $\frac{80}{200}$ or better (first M1 is implied) 21.8 seen implies first 2 M's		Pa	ge 4	l I	Mark Scheme: Teachers' ver			Syllabus	Paper	
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(b) $(0)51.8$ accept (0)52 but only with working 4 M1 for recognizing the 90 angle – may be marked on diagram. M1 for tan = $\frac{80}{200}$ or better (first M1 is implied) 21.8 seen implies first 2 M's									ionnanon (al R	lasi J
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implied) 21.8 seen implies first 2 M's				accep	or (0.52 but only with working			÷	ter (first M1 is	
								200		
								for adding 30.	1105 1115t Z IVI S	[6]

	Page	5 Mark Scheme: Teachers' ve IGCSE – May/June 201		Syllabus 0607	Paper 32
		IGCGE – May/Julie 201	L	0007	JL
11	(a)		/		
			3	 B1 for cubic shape with B1 for turning points in quadrants. B1 for <i>x</i>-axis intercepts: positive and one at original statements. 	the correct one negative, one
	(b)	(-2, 1) and (1, -0.35)	B1 B1	SC1 for correct points in	n wrong order
	(c)	<i>x</i> = 0, 1.81 (1.811 to 1.812)	B1 B1		
	(d)	their graph moved up 3	1	their graph with vertical	translation of 3 [8]
12	(a)	3820 (accept 3817)	1		
	(b)	3800	1		
	(c)	$\frac{3}{7}$	2	M1 for 15/35	
	(d) (i)	Positive	1		
	(ii)	Ruled line drawn through (180, their 3820)	2 ft	B1 for passing through a positive gradient.	nean, B1 for
	(iii)	3300 - 3500	1		[8]

Page		Syllabus Paper		
	IGCSE – May/June 20	12	0607 32	
13 (a)		2	B1 for reasonable shape with each part of graph in approximately the correct place. One branch above and one branch below <i>x</i> -axis Top branch not touching <i>y</i> -axis Bottom branch cutting <i>y</i> -axis Penalty of 1 if branches connected.	
(b)	x = 2, y = 0	B1 B1 ft	ft $\frac{3}{x} - 2$ only $x = 0, y = -2$	
(c)	Line on graph	1	Ruled line must have positive gradient and negative <i>y</i> -intercept	d
(d)	(0.697, -2.3(0)) (0.6972, -2.303 to -2.302), (4.3(0), 1.3(0)) (4.302 to 4.303, 1.302 to 1.303)	B1 B1	ft $\frac{3}{x}$ - 2 only (-1.3(0), -4.3(0)) (-1.303 to -1.302, -4.303 to -4.302) (2.3(0), -0.697) (2.302 to 2.303, -0.6972)	[7]