CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the May/June 2015 series

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 should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge will not enter into discussions about these mark schemes.

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Abbreviations

cao	correct answer only
dep	dependent
FT	follow through after error
isw	ignore subsequent working
oe	or equivalent
SC	Special Case
nfww	not from wrong working
soi	seen or implied

1	**(a)**	**(i)**	32 650	**1**	
		(ii)	32 700	**1**	
	(b)		62.6	**1**	
	(c)		530.8416	**1**	
	(d)		6	**1**	
	(e)		9	**1**	
	(f)		24	**1**	
	(g)		208 : 234	**2**	**M1** for dividing by 17 soi
	(h)		1.6[0]	**2**	**B1** for 8.4[0]
2	**(a)**		$\frac{75}{100}$ oe isw	**1**	
	(b)		66.67	**2**	**B1** for correct answer to ⩾ 2 sf
	(c)		$\frac{12}{25}$	**2**	**B1** if correct fraction not in lowest terms
	(d)		5.76	**1**	
	(e)		76.8[0]	**2**	**M1** for 0.8 × 96 oe
	(f)		120	**2**	**M1** for $\frac{800 \times 5 \times 3}{100}$ oe

3	**(a)**	$\frac{5}{10}$ oe	**1**	
	(b)	$\frac{4}{10}$ oe	**1**	
	(c)	$\frac{0}{10}$	**1**	
	(d)	$\frac{2}{10}$ oe	**1**	
4	**(a)**	40	**1**	
	(b)	blue	**1**	
	(c) **(i)**	brown = 9 green = 36 black = 72	**2**	**B1** for 1 correct angle
	(ii)	3 sectors correct	**2**	**B1** for 1 sector correct
5	**(a)**	6	**1**	
	(b)	24	**1**	
	(c)	1	**1**	
	(d)	12	**1**	
6	**(a)**	600	**2**	**B1** for 100
	(b)	314 or 314.1 to 314.2	**2**	**M1** for $4\times\pi\times5^2$ oe
	(c)	1520 or 1523 to 1524	**4**	**M3** for $10^3+\frac{4}{3}\times\pi\times5^3$ oe or **M2** for $\frac{4}{3}\times\pi\times5^3$ or **M1** for 10^3
	(d)	60.9 or 60.8 to 60.96	**2 FT**	If 0 scored **SC1 FT** for 6090 or 6080 to 6096

7	(a)		135	1	
	(b)		71.6 or 71.56 to 71.57	2	**M1** for $\tan[C] = \frac{36}{12}$
	(c)		37.9 or 37.94 to 37.95	2	**M1** for $\sqrt{36^2 + 12^2}$ or better
	(d)		25.5 or 25.45 to 25.46	3	**M2** for $CF = \frac{18}{\sin 45}$ or $\frac{18}{\cos 45}$ or **M1** for $\sin 45 = \frac{18}{CF}$ or $\cos 45 = \frac{18}{CF}$ If 0 scored **SC2** for correct answer from Pythagoras
	(e)	(i)	[triangle *CFG* is] isosceles [*CG* = 18]	1	**M1** for 31 – 18 oe
			31 – 18 = 13	1	Dep on isosceles
		(ii)	173 or 173.3 to 173.5	1 FT	**FT** 110 + *their* **(c)** + *their* **(d)**
	(f)		612	3	**M2** for 0.5×12×36 + 0.5×18 ×18 + 13 ×18 or better or **M1** for 0.5×12×36 or 0.5×18×18 or 13×18 or better
8	(a)		Points plotted correctly	2	**B1** for 4 points correct
	(b)		positive	1	
	(c)	(i)	6.75	1	
		(ii)	5	1	
		(iii)	Point plotted correctly	1 FT	
	(d)		Ruled line through mean within tolerance	2	**B1** any line through mean point
	(e)		5 or 6	1 FT	**FT** line with positive gradient
9	(a)			2	**M1** for correct shape **A1** for maximum in second quadrant and *x* intercepts approximately correct
	(b)		6	1	

	(c)		–2.47 or –2.475 to –2.474 0.808 or 0.8081…	**1** **1**	
	(d)		(–0.833, 8.08) or (–0.833.., 8.083..)	**1**	
	(e)			**2**	**B1** for positive gradient **B1** for correct y-intercept at approximately 4
	(f)		(–2.59, –1.18) or (–2.591 to –2.590, –1.181…) (0.257 , 4.51) or (0.2573…, 4.514 to 4.515)	**1** **1**	
10	**(a)**	**(i)**	–2	**2**	**M1** for subtracting 6 or dividing by 5
		(ii)	$x < 3$	**2**	**M1** for subtracting 3 or dividing by 6
	(b)	**(i)**	s^7	**1**	
		(ii)	t^8	**1**	
		(iii)	$6r^2$	**2**	**B1** for kr^2 or $6r^k$ $(k \neq 0)$
	(c)		$10x - 9$ final answer	**2**	**M1** for $(4x - 12)$ or $(6x + 3)$
	(d)		$3y(5 - y)$ final answer	**2**	**B1** for $3(5y - y^2)$ or $y(15 - 3y)$
11	**(a)**		18	**3**	**M2** for $\frac{15}{50} \times 60$ oe or **M1** for $\frac{15}{\textit{their}\ \text{time}}$ or $\frac{50}{60}$
	(b)		75	**3**	**M2** for $\frac{15}{12} \times 60$ or **M1** for $\frac{15}{12}$ or $\frac{12}{60}$ or 5 min/km