



**Cambridge International Examinations**  
Cambridge International General Certificate of Secondary Education

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**CAMBRIDGE INTERNATIONAL MATHEMATICS**

**0607/33**

Paper 3 (Core)

**October/November 2016**

MARK SCHEME

Maximum Mark: 96

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**Published**

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.

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Page 2	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2016	0607	33

**Abbreviations**

awrt	answers which round to
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

Question	Answer	Marks	Part Marks	
<b>1 (a)</b>	trapezium	1	<b>B1</b> for 1 correct line and no incorrect or for 2 correct lines but $\geq 1$ incorrect	
	triangle	1		
	square	1		
	parallelogram	1		
<b>(b) (i)</b>	2	1		
<b>(ii)</b>	2 correct lines	2		
<b>2 (a) (i)</b>	38	1		
	<b>(ii)</b>	6		1
	<b>(iii)</b>	67		2
	<b>(b)</b>	4400		2
	<b>(c)</b>	5	3	
<b>3 (a) (i)</b>	130	1		
	<b>(ii)</b>	Obtuse	1	
	<b>(b)</b>	147	1	
	57	1		
	33	1		
<b>4 (a)</b>	Correct pattern	1		
	<b>(b)</b>	13, 16	1	
	<b>(c)</b>	+3 oe	1	
	<b>(d)</b>	Sarah, with correct justification	3	

Page 3	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2016	0607	33

5	(a)	62.5 oe	2	M1 for $6\frac{1}{4} \times 10$ oe
	(b)	12 min 30 sec	4	B3 for 12.5 minutes seen or M2 for $6.25 \div 30 \times 60$ oe or M1 for $6.25 \div 30$ oe
6	(a)	57	2	B1 for 12 or 45 seen or M1 for $6 \times 2 + 9 \times 5$ seen
	(b)	$5x + 13$	2	B1 for $5x$ or $[\+]13$ seen
	(c)	$3(2x + 3y)$	1	
7	(a)	24	2	M1 for $6 \times 8 \div 2$ soi
	(b)	336	3FT	FT 288 + 2×their (a) M2 for $12 \times 8$ , $12 \times 10$ and $12 \times 6$ soi or M1 for any two of $12 \times 8$ , $12 \times 10$ , $12 \times 6$ soi
	(c)	288	1FT	FT 12×their (a)
8	(a)	16.11	3	M2 for $8.95 \div 5 \times 9$ or M1 for $8.95 \div 5$
	(b)	1.38	3	M2 for $1.20 \times 1.15$ oe or M1 for $1.20 \times 0.15$ oe
	(c)	12	3	M2 for $(5.50 - 4.84) \div 5.50$ oe or M1 for $4.84 \div 5.50$ oe
9	(a)	10	1	
	(b)	2	3	M1 for $6x - 3 = 9$ or for $2x - 1 = 3$ M1 for $6x = 12$ or for $2x = 4$
	(c)	$4\frac{1}{2}$ oe	3	M2 for $7x - 3x$ seen and $20 - 2$ seen or M1 for $7x - 3x$ seen or $20 - 2$ seen
10	(a)	[0.75, 1.5] 3, 6, 12, 24	1	
	(b)	Correct curve	1	B1 for correct shape
	(c) (i)	Correct line	1	B1 for crosses y-axis at approximately 3
	(ii)	1.415 to 1.42	1	Above where curve crosses y-axis

Page 4	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2016	0607	33

11	(a)	Steve Median = 27 IQR = 13	1 2	B1 for 30 or 17 seen
	(b)	Tam Median = 23 IQR = 11 or 11.5	1 2	
	(c)	Steve's plants are taller oe Tam's plants have a more consistent height oe	1 1	
12	(a)	[0.455] 0.21, 0.335	2	M1 for $n \div 200$ soi
	(b)	Large amount of trials oe	1	
	(c)	1675	2	M1 for <i>their</i> $\frac{67}{200} \times 5000$
	(d)	0.665	2	M1 for $0.455 + \text{their}(0.21)$
13	(a)	$1.17 \times 10^{13}$	2	B1 for $9 \times 10^{16}$ seen
	(b)	[0].00013	1	
	(c)	$\sqrt{\frac{E}{m}}$ oe	2	M1 for $c^2 = \frac{E}{m}$ or SC1 for answer $\frac{\sqrt{E}}{m}$
14		826 or 825.6 to 825.7	6	M1 for $3 \times 100$ M1 for $4 \times 80$ M1 for $2 \times 40$ M2 for $\frac{1}{2} \times \pi \times 80$ or M1 for $\pi \times 80$
15	(a)	8.13 or 8.127...	2	M1 for $4.6^2 + 6.7^2$ seen
	(b)	27.6 or 27.64...	3	M2 for $10.8 \div \sin 23$ or M1 for $\sin 23 = \frac{10.8}{y}$