

MARK SCHEME for the May/June 2014 series

0607 CAMBRIDGE INTERNATIONAL MATHEMATICS

0607/31

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.

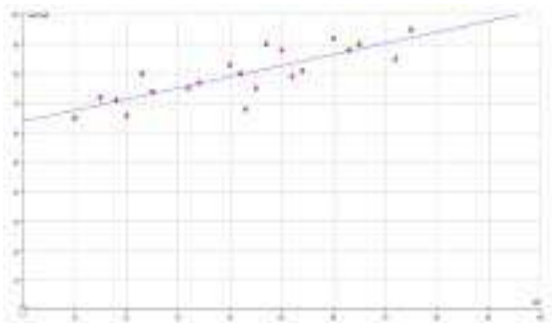
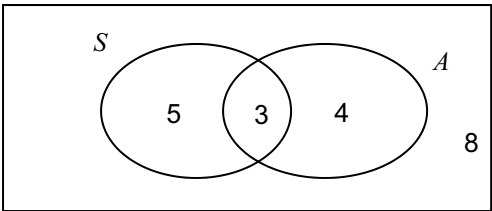
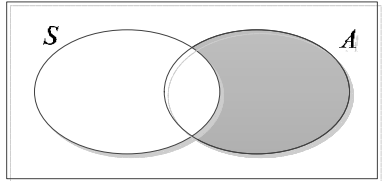
Cambridge is publishing the mark schemes for the May/June 2014 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

Page 2	Mark Scheme	Syllabus	Paper
	IGCSE – May/June 2014	0607	31

1	(a)	25	1	
	(b)	21	1	
	(c)	22	1	
	(d)	27	1	
	(e)	23	1	
2	(a)	13.7	2	M1 for 6.2 or 7.5 seen
	(b)	3.5	2	B1 for $2p = 7$
	(c)	$q = \frac{r - 2p}{3}$	2	M1 for correct rearrangement for q or M1 for correct division by 3
3	(a)	21, 17	1, 1FT	FT (<i>their</i> 21) – 4
	(b)	7.7	2	B1 for 7.745 – 7.746
	(c)	$\frac{7}{25}$	1	
	(d)	392 : 112	2	M1 for dividing by 9, soi by 56
	(e)	0.11, $\frac{1}{8}$, 1.3×10^{-1} , 14% oe	2	B1 for 3 in correct order when one is covered up
4	(a)	70	1	
	(b)	20	1	
	(c)	110	1 FT	FT 180 – <i>their</i> <i>AMB</i>


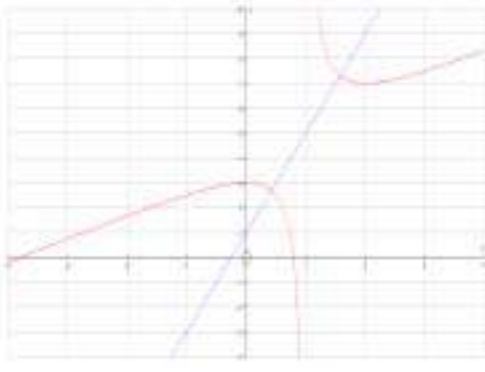
5 (a)	<table border="1"> <thead> <tr> <th>Raisins</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>37</td> <td>[3]</td> </tr> <tr> <td>38</td> <td>8</td> </tr> <tr> <td>39</td> <td>7</td> </tr> <tr> <td>40</td> <td>[4]</td> </tr> <tr> <td>41</td> <td>4</td> </tr> <tr> <td>42</td> <td>2</td> </tr> <tr> <td>43</td> <td>[2]</td> </tr> </tbody> </table>	Raisins	Frequency	37	[3]	38	8	39	7	40	[4]	41	4	42	2	43	[2]	2	B1 for 2 correct entries
	Raisins	Frequency																	
	37	[3]																	
	38	8																	
	39	7																	
	40	[4]																	
	41	4																	
42	2																		
43	[2]																		
(b)	Heights 8, 7, 4, 2	1 1 FT	B1 for correct width B1FT for correct heights																
(c) (i)	6	1																	
(ii)	38	1 FT																	
(iii)	39	1 FT																	
(iv)	39.4	1 FT																	
(d)	$\frac{8}{30}$ oe	1 FT	FT <i>their</i> 8 isw																
6 (a)	1750	1																	
(b)	450	1 FT	FT from (a)																
(c) (i)	45	2 FT	M1 for $\frac{10}{100} \times \textit{their (b)}$																
(ii)	405	1 FT																	
(d)	18630	2 FT	M1 for $(52 - 6) \times \textit{their (c)(ii)}$																

Page 4	Mark Scheme	Syllabus	Paper
	IGCSE – May/June 2014	0607	31

7	(a) 120 (b) 20 (c) The angles are not the same oe So, yes it is biased	1 2 2	M1 for $\frac{63}{360} \times 120$ oe M1 for a correct reason.
8	(a) positive (b) Point correctly plotted on diagram (c)  (d) 75 ± 2	1 1 2 1 FT	M1 for line passing through the point (42, 80) M1 for line within tolerance FT from their line
9	(a) 76 (b) 10 hours 59 minutes	1 2	M1 for $\frac{494}{45}$. If M0 , SC1 for 10 h 58 min or 11 h.
10	(a)  (b) 8 (c) e.g. Square, regular polygons, equilateral triangle (d) 	2 2 1 1	B1 for 3 in $S \cap A$ M1 for $20 - \text{their value in Venn diagram}$

Page 5	Mark Scheme	Syllabus	Paper
	IGCSE – May/June 2014	0607	31

11	(a)	$5d + 4s = 1850$	1	
	(b)	$d = 250$ $s = 150$	1 1	If 0 scored, M1 for correctly eliminating one variable
12	(a)	12.5 or 12.52 to 12.53	2	M1 for $11^2 + 6^2$
	(b)	28.6 or 28.3 to 28.7	2	M1 for use of correct trig ratio
13	(a)	630	3	M1 for area of rectangle (30×18) M1 for area of triangle(s) $[0.5] \times 5 \times 18$
	(b)	9850 or 9836 to 9852	5	M2 for $\sqrt{5^2 + 18^2}$ or M1 for $5^2 + 18^2$. M1FT for $[2] \times \text{their } \sqrt{5^2 + 18^2} \times 80$ M1 for $(30 \times 80) + (40 \times 80)$ soi
	(c)	50400	1 FT	$80 \times \text{their (a)}$
	(d)	50.4[00]	1 FT	$\frac{\text{their (c)}}{100}$
	(e)	4.01 or 4.01...	2 FT	M1 <i>their (d)</i> divided by 4π
14	(a)	97.2 or 97.18...	3	M1 for $\sin[x] = \frac{6}{8}$ or better M1 for doubling answer SC2 if 48.59... seen
	(b)	48.6 or 48.59...	2 FT	B1 for 41.40 to 41.41 seen
	(c)	13.6 or 13.57...	2 FT	M1 for <i>their</i> $\frac{97.2}{360}$ seen

<p>15 (a)</p>		<p>4</p>	<p>B2 for two separate curves seen and approximately correct shape or B1 if curves joined B1 for maximum and minimum in approximately correct place B1 for axes intercepts in approximately correct place</p>
<p>(b)</p>	<p>(2, 7)</p>	<p>1</p>	
<p>(c)</p>	<p>$x = 1$</p>	<p>1</p>	
<p>(d)</p>	<p>$[f(x)] \leq 3$</p>	<p>2</p>	<p>B1 for $[f(x)] < 3$</p>
<p>(e)</p>		<p>2</p>	<p>B2 for line within tolerance B1 for line with positive gradient cutting each branch of the curve once.</p>
<p>(f)</p>	<p>0.423 or 0.4226... 1.58 or 1.577...</p>	<p>1 1</p>	