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CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the October/November 2015 series

0580 MATHEMATICS

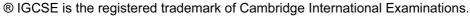
0580/43 Paper 4 (Extended), maximum raw mark 130

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 October/November 2015 series for most Cambridge IGCSE[®], Cambridge International A and AS Level components and some Cambridge O Level components.





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Page 2	Mark Scheme	Syllabus	P. May Asin
	Cambridge IGCSE – October/November 2015	0580	43
			SCIOUR
Abbrevi	ations		Ad
cao	correct answer only		COM
dep	dependent		

Abbreviations

follow through after error FTignore subsequent working isw

oe or equivalent SCSpecial Case

not from wrong working nfww

seen or implied soi

Q	uestion	Answer	Mark	Part marks
1	(a) (i)	3.9[0]	2	M1 for 2.6 ÷ 2
	(ii)	$\frac{13}{18}$ cao	2	B1 for any correct unsimplified fraction
	(iii)	24	3	M2 for $9 \div 0.375$ oe
				or M1 for associating 9 with (100 – 62.5)%
	(b)	109 cao	3	B2 for 108.5 to 108.6 or
				M1 for $250 \times \left(1 - \frac{8}{100}\right)^{10}$ oe
2	(a) (i)	Image at (-2, 5), (1, 5), (1, 7)	2	SC1 for translation $\begin{pmatrix} -4 \\ k \end{pmatrix}$ or $\begin{pmatrix} k \\ 4 \end{pmatrix}$
	(**)	I (2 2) (5 2) (5 5)	2	or 3 correct vertices plotted but not joined
	(ii)	Image at $(2, -3)$, $(5, -3)$, $(5, -5)$	2	SC1 for a reflection in a horizontal line or in the line $x = -1$ or 3 correct vertices plotted but not joined
	(b)	Rotation	1	Alt
		180 oe	1	Enlargement SF -1 $(-1, 0)$
		(-1,0)	1	Not as column vector
	(c) (i)	Reflection	1	
		y = -x oe	1	
	(ii)	$\begin{pmatrix} 0 & -1 \\ -1 & 0 \end{pmatrix}$	2	SC1 for a correct row or column

			3, 3
Page 3	Mark Scheme	Syllabus	P. Thank
	Cambridge IGCSE – October/November 2015	0580	4.0
	-		300

3	(a)	43 200	3	M2 for 0.5 × (35 + 25) × 12 × 120 oe or M1 for 0.5 × (35 + 25) × 12 oe
	(b) (i)	$0.5 \times (25 + 30) \times 6 \times 120 = 19800$	M2	Dep on a valid method for obtaining the width of 30 cm B1 for $0.5 \times (25 + 35)$ oe
	(ii)	45.8 or 45.83	1FT	FT for $\frac{19800}{their(\mathbf{a})} \times 100$
	(c)	1 hr 39 min	4	B3 for 1.65 [h] or 99 mins or $\frac{33}{20}$ or M2 for $\frac{19800}{12 \times 1000}$ oe or M1 for $\frac{19800}{12}$ or $\frac{19800}{1000}$ or 12×1000
				If zero scored then SC1 for figs 165 and B1 for converting their time (in hours) into hours and minutes
	(d)	12.8 or 12.80 to 12.81	3	M2 for $\sqrt[3]{\frac{19800}{3\pi}}$ or M1 for $\pi r^2 3r = 19800$
	(e)	21[.0]	2	M1 for $\frac{19800}{1000} + 1.2$

Page 4	Mark Sch	eme		Syllabus	P. May 15th
- J	Cambridge IGCSE – Octo		ovember 2015	0580	43 81/1801
4 (a)	-1.5, 0.5	2	B1, B1		4010,COM
(b)	Correct curve	5	B3 FT for 10 or 11 points		

4	(a)	-1.5, 0.5	2	B1, B1
	(b)	Correct curve	5	B3 FT for 10 or 11 points or B2FT for 8 or 9 points or B1FT for 6 or 7 points and B1 independent for two branches SC4 for correct curve but branches joined
	(c)	1.25 to 1.35	1	
	(d)	-1	1	
	(e) (i)	2-x	1	
	(ii)	Ruled line with gradient –1 through (0, 2) and fit for purpose 1.15 to 1.25 cao	2FT 1	SC1 for ruled line, with gradient -1 or through $(0, 2)$, but not $y = 2$ FT their $y = mx + c$ from (e)(i) , if $m \ne 0$ SC1FT for ruled line either with correct gradient or through $(0, c)$, but not $y = c$
5	(a)	2180 or 2181 nfww	4	M2 for $680^2 + 2380^2 - 2 \times 680 \times 2380 \cos 65$ oe or M1 for correct implicit cosine formula A1 for 4760000 or 4758000 to 4759000
	(b)	78.7 or 78.71	3	M2 for $\frac{2380 \sin 40}{1560}$ or M1 for $\frac{1560}{\sin 40} = \frac{2380}{\sin M}$ oe
	(c)	309 or 308.7	2FT	FT 230 + <i>their</i> (b) B1FT 50 + <i>their</i> (b) for 129 or 128.7 [i.e. for <i>C</i> from <i>M</i>]
	(d) (i)	23 39 oe	1	
	(ii)	650	2	M1 for 1560 ÷ journey time

					mn. m. m.		
Page 5	Mark Sche	eme		Syllabus	P. Mary		
	Cambridge IGCSE – Octo	ovember 2015	0580				
	Cambridge IGCSE – October/November 2015 0580 43 75C/Ducy						
6 (a)	101.5625 or 102 or 101.5 to 101.6 nfww	4	M1 for 55, 90, 110, 160 s	oi	AD.COM		
ı			M1 for Σfm with frequen	cies and eacl	n m in or		

6	(a)	101.5625 or 102 or 101.5 to 101.6 nfww	4	 M1 for 55, 90, 110, 160 soi M1 for Σfm with frequencies and each m in or on a boundary of a correct interval 2750, 2700, 4400, 6400 M1 dep on 2nd M for ÷ 160
	(b)	Correct histogram drawn with correct widths and heights 1, 1.5 and 2 (no gaps)	3	B1 for each correct block If zero scored, SC1 for correct heights or frequency densities
	(c)	$\frac{40}{160}$ oe	1	
	(d) (i)	$\frac{1560}{25440}$ oe	2	M1 for $\frac{40}{160} \times \frac{39}{159}$
	(ii)	$\frac{4000}{25440}$ oe	3	M2 for $\frac{40}{160} \times \frac{50}{159} + \frac{50}{160} \times \frac{40}{159}$ oe or M1 for one of these products soi
7	(a)	83 nfww	4	B3 for $17x = 1411$ or $17x = 14.11$ oe in form $ax = b$ or final answer of 0.83 or B2 for $6x + 11x - 55 = 1356$ oe or $6x + 11x - [0.]$ $55 = 13[.]$ 56 or M1 for $6x + 11(x - [0.0]5) = 13[.]$ 56
	(b)	$\frac{1}{3}$ oe nfww	4	M1 for $y(y+3)$ oe or $\frac{1}{2}(2y+1)(y+1)$ oe and B2 for $2y^2 + 6y = 2y^2 + 2y + y + 1$ oe or better or B1 for $(2y+1)(y+1) = 2y^2 + 2y + y + 1$ soi

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Page 6	Mark Sch	eme		Syllabus	P. The Control
	Cambridge IGCSE – Octo	ber/No	vember 2015	0580	43 9/70 %
		•			43 Msc/oug
(c)	25 nfww	4	M1 for $\frac{4[.]80}{w-1}$ or $\frac{7[.]80}{2w-1}$		Ad. Com

(c) 25 nfww $ \begin{array}{ccccccccccccccccccccccccccccccccccc$		T .		
M1 for $480(2w-11) = 780(w-1)$ oe or ALT M1 for $n(w-1) = 4[.]80$ or $n(2w-11) = 7[.]80$ M1 for $2wn-11n = 7[.]80$ 2wn - 2n = 9[.]60 oe M1 for $9n = 180$ oc or better or ALT M1 for $n(w-1) = 4[.]80$ or $n(2w-11) = 7[.]80$ M1 for $9n = 180$ oc or better or ALT M1 for $n(w-1) = 4[.]80$ or $n(2w-11) = 7[.]80$ M1 for $9n = 180$ oc or better or ALT M1 for $9n = 180$ oe or better M1 for $9n = 180$ oc or better SC1 for $3u + a)(u + b)$ where $ab = -5$ or $a + 3b = -2$ [a, b integers] M2 for $ab = -5$ or $ab = -2$ [a, b integers] M2 for $ab = -5$ or $ab = -2$ [a, b integers] M2 for $ab = -2$ [a, b integers] M3 for $ab = -2$ [a, b integers] M2 for $ab = -2$ [a, b integers] M3 for $ab = -2$ [a, b integers] M2 for $ab = -2$ [a, b integers] M3 for $ab = -2$ [a, b integers] M2 for $ab = -2$ [a, b integers] M3 for $ab = -2$ [a, b integers] M3 for $ab = -2$ [a, b integers] M2 for $ab = -2$ [a, b integers] M3 for $ab = -2$ [a, b integers] M4 for $ab = -2$ [a, b integers] M3 for ab	(c)	25 nfww	4	M1 for $\frac{4[.]80}{w-1}$ or $\frac{7[.]80}{2w-11}$
M1 for $480(2w-11) = 780(w-1)$ oe or ALT M1 for $n(w-1) = 4[.]80$ or $n(2w-11) = 7[.]80$ M1 for $2wn-11n = 7[.]80$ 2wn - 2n = 9[.]60 oe M1 for $9n = 180$ oc or better or ALT M1 for $n(w-1) = 4[.]80$ or $n(2w-11) = 7[.]80$ M1 for $9n = 180$ oc or better or ALT M1 for $n(w-1) = 4[.]80$ or $n(2w-11) = 7[.]80$ M1 for $9n = 180$ oc or better or ALT M1 for $9n = 180$ oe or better M1 for $9n = 180$ oc or better SC1 for $3u + a)(u + b)$ where $ab = -5$ or $a + 3b = -2$ [a, b integers] M2 for $ab = -5$ or $ab = -2$ [a, b integers] M2 for $ab = -5$ or $ab = -2$ [a, b integers] M2 for $ab = -2$ [a, b integers] M3 for $ab = -2$ [a, b integers] M2 for $ab = -2$ [a, b integers] M3 for $ab = -2$ [a, b integers] M2 for $ab = -2$ [a, b integers] M3 for $ab = -2$ [a, b integers] M2 for $ab = -2$ [a, b integers] M3 for $ab = -2$ [a, b integers] M3 for $ab = -2$ [a, b integers] M2 for $ab = -2$ [a, b integers] M3 for $ab = -2$ [a, b integers] M4 for $ab = -2$ [a, b integers] M3 for ab				
Contact Con				M1 for $\frac{1}{w-1} = \frac{1}{2w-11}$ oe
ALT MI for $n(w-1) = 4[.]80 \text{ or } n(2w-11) = 7[.]80$ MI for $2wn - 11n = 7[.]80$ $2wn - 2n = 9[.]60 \text{ oe}$ MI for $9n = 180$ oe or better or ALT MI for $n(w-1) = 4[.]80 \text{ or } n(2w-11) = 7[.]80$ MI for $9n = 180$ oe or better (d) (i) $\frac{1}{2}u(3u-2) = 2.5$ One further correct step leading to $3u^2 - 2u - 5 = 0$ with no errors (ii) $(3u - 5)(u + 1)$ 2 SC1 for $(3u + a)(u + b)$ where $ab = -5$ or $a + 3b = -2$ [a, b integers] (iii) 29.1 or 29.05 3 M2 for $\tan \frac{their \frac{5}{3}}{3 \times their \frac{5}{3} - 2}$ or MI for substituting their positive value of u into [u and] $3u - 2$ 8 (a) (i) Angle A is common to both triangles oe $ADB = ABC$ Third angle of triangles equal oe (ii) Similar 1 Accept $DAB = CAB$ oe Third angle of triangles equal oe (iii) 8.25 2 M1 for $\frac{16}{12} = \frac{11}{BD}$ oe or better (b) (i) 38 1 (ii) 38 1 (iii) 78				M1 for $480(2w-11) = 780(w-1)$ oe
M1 for $n(w-1) = 4[.]80$ or $n(2w-11) = 7[.]80$ M1 for $2wn - 2n = 9[.]60$ oe M1 for $2wn - 2n = 9[.]60$ oe M1 for $9n = 180$ oe or better Or ALT M1 for $n(w-1) = 4[.]80$ or $n(2w-11) = 7[.]80$ M1 for $n(w-1) = 4[.]80$ or $n(w-1) = 7[.]80$ M1 for $n(w-1) = 4[.]80$ or $n(w-1) = 7[.]80$ M1 for $n(w-1) = 4[.]80$ or $n(w-1) = 7[.]80$ M1 for $n(w-1) = 4[.]80$ or $n(w-1) = 7[.]80$ M1 for $n(w-1) = 4[.]80$ or $n(w-1) = 7[.]80$ M1 for $n(w-1) = 4[.]80$ or $n(w-1) = 7[.]80$ M1 for $n(w-1) = 4[.]80$ or $n(w-1) = 7[.]80$ M1 for $n(w-1) = 4[.]80$ or $n(w-1) = 7[.]80$ M1 for $n(w-1) = 4[.]80$ or $n(w-1) = 7[.]80$ M1 for $n(w-1) = 4[.]80$ or $n(w-1) = 7[.]80$ M1 for $n(w-1) = 4[.]80$ or $n(w-1) = 7[.]80$ M1 for $n(w-1) = 4[.]80$ or $n(w-1) = 7[.]80$ M1 for $n(w-1) = 4[.]80$ or $n(w-1) = 7[.]80$ M1 for $n(w-1) = 4[.]80$ or $n(w-1) = 7[.]80$ M1 for $n(w-1) = 4[.]80$ or $n(w-1) = 7[.]80$ M1 for $n(w-1) = 4[.]80$ or $n(w-1) = 7[.]80$ M1 for $n(w-1) = 7[.]80$ M1 for $n(w-1) = 7[.]80$ M1 for $n(w-1$				
MI for $2wn - 11n = 7[.]80$ $2wn - 2n = 9[.]60$ oc MI for $9n = 180$ oe or better or ALT MI for $w = 180$ oe or better or ALT MI for $w = 180$ oe or better MI for $w = 180$ or $w = 180$ oe or better MI for $w = 180$ or $w = 180$ oe or better MI for $w = 180$ or				
				, , , , , , , , , , , , , , , , , , , ,
MI for $9n = 180$ oe or better or ALT MI for $n(w-1) = 4[.]80$ or $n(2w-11) = 7[.]80$ MI for $n(2w-11) = 7$				
Contact ALT M1 for $n(w-1) = 4[.]80$ or $n(2w-11) = 7[.]80$ M1 for $n(2w-11) $				2.3
ALT M1 for $n(w-1) = 4[.]80$ or $n(2w-11) = 7[.]80$ M1 for $n(2w-11) = 7$				
M1 for $n(w-1) = 4[.]80$ or $n(2w-11) = 7[.]80$ M1 for $\frac{4[.]80 + n}{n} = \frac{7[.]80 + 11n}{2n}$ M1 for $9n = 180$ oe or better				
M1 for $\frac{4[.]80 + n}{n} = \frac{7[.]80 + 11n}{2n}$ M1 for $9n = 180$ oe or better (d) (i) $\frac{1}{2}u(3u - 2) = 2.5$ M1 First step must involve $\frac{1}{2}u(3u - 2)$ (ii) $(3u - 5)(u + 1)$ 2 SC1 for $(3u + a)(u + b)$ where $ab = -5$ or $a + 3b = -2$ [a, b integers] (iii) 29.1 or 29.05 3 M2 for $\tan \frac{their \frac{5}{3}}{3 \times their \frac{5}{3} - 2}$ or M1 for substituting their positive value of u into [u and] $3u - 2$ 8 (a) (i) Angle A is common to both triangles oe ADB = ABC Third angle of triangles equal oe Idep Dep on previous mark (iii) 8.25 2 M1 for $\frac{16}{12} = \frac{11}{BD}$ oe or better (b) (i) 38 1 (ii) 38 1 (iii) 78 1				
(d) (i) $\frac{1}{2}u(3u-2)=2.5$ One further correct step leading to $3u^2-2u-5=0$ with no errors (ii) $(3u-5)(u+1)$ 2 SC1 for $(3u+a)(u+b)$ where $ab=-5$ or $a+3b=-2$ [a,b integers] (iii) 29.1 or 29.05 3 M2 for $\tan = \frac{their \frac{5}{3}}{3 \times their \frac{5}{3}-2}$ or M1 for substituting their positive value of u into [u and] $3u-2$ 8 (a) (i) Angle A is common to both triangles oe $ADB = ABC$ Third angle of triangles equal oe (ii) Similar 1 (iii) 8.25 2 M1 for $\frac{16}{12} = \frac{11}{BD}$ oe or better (b) (i) 38 (ii) 38 (iii) 78				, , , , , , , , , , , , , , , , , , , ,
(d) (i) $\frac{1}{2}u(3u-2) = 2.5$ One further correct step leading to $3u^2 - 2u - 5 = 0$ with no errors (ii) $(3u-5)(u+1)$ 2 SC1 for $(3u+a)(u+b)$ where $ab = -5$ or $a+3b = -2$ [a,b integers] (iii) 29.1 or 29.05 3 M2 for $\tan = \frac{their \frac{5}{3}}{3 \times their \frac{5}{3} - 2}$ or M1 for substituting their positive value of u into [u and] $3u-2$ 8 (a) (i) Angle A is common to both triangles oe $ADB = ABC$ Third angle of triangles equal oe (iii) Similar 1 Accept $DAB = CAB$ oe Dep on previous mark (iii) 8.25 2 M1 for $\frac{16}{12} = \frac{11}{BD}$ oe or better (b) (i) 38 (ii) 38 (iii) 38 (iii) 38 (iii) 78				M1 for $\frac{n}{n} = \frac{n}{2n}$
One further correct step leading to $3u^2 - 2u - 5 = 0$ with no errors (ii) $(3u - 5)(u + 1)$ 2 SC1 for $(3u + a)(u + b)$ where $ab = -5$ or $a + 3b = -2$ [a, b integers] (iii) 29.1 or 29.05 3 M2 for $\tan = \frac{their \frac{5}{3}}{3 \times their \frac{5}{3} - 2}$ or M1 for substituting their positive value of u into [u and] $3u - 2$ 8 (a) (i) Angle A is common to both triangles oe $ADB = ABC$ Third angle of triangles equal oe (ii) Similar 1 Accept $DAB = CAB$ oe Therefore $ABB = ABC$ Dep on previous mark (iii) 8.25 2 M1 for $ABB = ABC$ Dep on previous mark (iii) 38 1 (iii) 38 1 (iii) 38 1 (iii) 78				
One further correct step leading to $3u^2 - 2u - 5 = 0$ with no errors (ii) $(3u - 5)(u + 1)$ 2 SC1 for $(3u + a)(u + b)$ where $ab = -5$ or $a + 3b = -2$ [a, b integers] (iii) 29.1 or 29.05 3 M2 for $\tan = \frac{their \frac{5}{3}}{3 \times their \frac{5}{3} - 2}$ or M1 for substituting their positive value of u into [u and] $3u - 2$ 8 (a) (i) Angle A is common to both triangles oe $ADB = ABC$ Third angle of triangles equal oe (ii) Similar 1 Accept $DAB = CAB$ oe Therefore $ABB = ABC$ Dep on previous mark (iii) 8.25 2 M1 for $ABB = ABC$ Dep on previous mark (iii) 38 1 (iii) 38 1 (iii) 38 1 (iii) 78	(d) (i)	$\frac{1}{2}u(3u-2)=2.5$	M1	First step must involve $\frac{1}{2}u(3u-2)$
(ii) $3u^2 - 2u - 5 = 0$ with no errors A1 (iii) $(3u - 5)(u + 1)$ 2 SC1 for $(3u + a)(u + b)$ where $ab = -5$ or $a + 3b = -2$ [a, b integers] (iii) 29.1 or 29.05 3 M2 for tan = $\frac{their \frac{5}{3}}{3 \times their \frac{5}{3} - 2}$ or M1 for substituting their positive value of u into [u and] $3u - 2$ 8 (a) (i) Angle A is common to both triangles oe ADB = ABC Third angle of triangles equal oe 1 dep Dep on previous mark (ii) Similar 1 M1 for $\frac{16}{12} = \frac{11}{BD}$ oe or better (b) (i) 38 1 (ii) 38 1 (iii) 78 1				2
(ii) $(3u-5)(u+1)$ 2 SC1 for $(3u+a)(u+b)$ where $ab=-5$ or $a+3b=-2$ [a,b integers] (iii) 29.1 or 29.05 3 M2 for $\tan = \frac{their \frac{5}{3}}{3 \times their \frac{5}{3} - 2}$ or M1 for substituting their positive value of u into [u and] $3u-2$ 8 (a) (i) Angle A is common to both triangles oe $ADB = ABC$ Third angle of triangles equal oe 1 Accept $DAB = CAB$ oe (ii) Similar 1 Dep on previous mark (iii) 8.25 2 M1 for $\frac{16}{12} = \frac{11}{BD}$ oe or better (b) (i) 38 1 (iii) 38 1 (iii) 78 1			A 1	
where $ab = -5$ or $a + 3b = -2$ [a , b integers] 3		3u - 2u - 3 = 0 with no circles	AI	
(iii) 29.1 or 29.05 3 M2 for $\tan = \frac{their \frac{5}{3}}{3 \times their \frac{5}{3} - 2}$ or M1 for substituting their positive value of u into $[u \text{ and}] 3u - 2$ 8 (a) (i) Angle A is common to both triangles oe $ADB = ABC$ Third angle of triangles equal oe (ii) Similar 1 Dep on previous mark (iii) 8.25 2 M1 for $\frac{16}{12} = \frac{11}{BD}$ oe or better (b) (i) 38 (ii) 38 1 (iii) 78	(ii)	(3u-5)(u+1)	2	SC1 for $(3u + a)(u + b)$
8 (a) (i) Angle A is common to both triangles oe ADB = ABC Third angle of triangles equal oe (ii) Similar 1 (iii) 8.25 2 M1 for $\frac{16}{12} = \frac{11}{BD}$ oe or better (b) (i) 38 1 (iii) 78 1 1				where $ab = -5$ or $a + 3b = -2$ [a, b integers]
8 (a) (i) Angle A is common to both triangles oe ADB = ABC Third angle of triangles equal oe (ii) Similar 1 (iii) 8.25 2 M1 for $\frac{16}{12} = \frac{11}{BD}$ oe or better (b) (i) 38 1 (iii) 78 1 1				.1 • 5
8 (a) (i) Angle A is common to both triangles oe ADB = ABC Third angle of triangles equal oe (ii) Similar 1 (iii) 8.25 2 M1 for $\frac{16}{12} = \frac{11}{BD}$ oe or better (b) (i) 38 1 (iii) 78 1 1	(iii)	29.1 or 29.05	3	M2 for tan = $\frac{their \frac{z}{3}}{2}$
8 (a) (i) Angle A is common to both triangles oe ADB = ABC Third angle of triangles equal oe (ii) Similar (iii) 8.25 (b) (i) 38 (iii) 38 (iii) 78 M1 for substituting their positive value of u into [u and] $3u - 2$ Accept $DAB = CAB$ oe Dep on previous mark 1 M1 for substituting their positive value of u into [u and] $3u - 2$				$3 \times their \frac{3}{3} - 2$
8 (a) (i) Angle A is common to both triangles oe ADB = ABC Third angle of triangles equal oe (ii) Similar 1 Accept DAB = CAB oe Therefore Ther				
8 (a) (i) Angle A is common to both triangles oe ADB = ABC Third angle of triangles equal oe (ii) Similar (iii) 8.25 (b) (i) 38 (iii) 38 (iii) 78 Accept $DAB = CAB$ oe Dep on previous mark 1 Accept $DAB = CAB$ oe				
triangles oe $ADB = ABC$ Third angle of triangles equal oe (ii) Similar (iii) 8.25 2 M1 for $\frac{16}{12} = \frac{11}{BD}$ oe or better (b) (i) 38 (ii) 38 1 (iii) 78				
ADB = ABC Third angle of triangles equal oe $(ii) Similar$ $(iii) 8.25$ $(b) (i) 38$ $(iii) 38$ $(iii) 38$ $(iii) 78$ 1 1	8 (a) (i)		1	Accept $DAB = CAB$ oe
Third angle of triangles equal oe (ii) Similar (iii) 8.25 2 M1 for $\frac{16}{12} = \frac{11}{BD}$ oe or better (b) (i) 38 (ii) 38 1 (iii) 78				
(ii) Similar 1 (iii) 8.25 2 M1 for $\frac{16}{12} = \frac{11}{BD}$ oe or better (b) (i) 38 1 (ii) 38 1 (iii) 78 1			1den	Dep on previous mark
(iii) 8.25 (b) (i) 38 (ii) 38 (iii) 78 2 M1 for $\frac{16}{12} = \frac{11}{BD}$ oe or better 1 1			_	Dep on provious mark
(b) (i) 38	(ii)	Similar	1	
(b) (i) 38	(***)	0.25		M 6 16 11
(ii) 38	(111)	8.23	2	M1 for ${12} = {BD}$ oe or better
(iii) 78 1	(b) (i)	38	1	
	(ii)	38	1	
(iv) 26 1	(iii)	78	1	
	(iv)	26	1	

			1. M. 32
Page 7	Mark Scheme	Syllabus	Pulm
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			- OC/

(c)	36 nfww	5	B4 for an equation in m that simplifies to $5m = 180$ or B1 for each of 3 of the listed angles expressed in terms of m , in it's simplest form, stated or labelled on diagram Angle $PQO = m$ Angle $QOR = m$ Angle $QOR = m$ Angle $QOR = 2m$ Angle $PQR = 3m$ or $180 - 2m$ or $90 + \frac{m}{2}$ Angle $POR = 180 - m$ or $4m$ or $360 - 6m$ Reflex angle $POR = 360 - 4m$ or $6m$ or $180 + m$
9 (a)	8	1	
(b)	3	2	B1 for $[g(0.5) =] 2$ soi or
			M1 for $2\left(\frac{1}{x}\right) - 1$ or better
(c)	$\frac{x+1}{2}$ final answer	2	M1 for $x = 2y - 1$ or $y + 1 = 2x$ or better or $\frac{y}{2} = x - \frac{1}{2}$
(d)	4x-3	2	M1 for $2(2x-1)-1$
(e)	$4x^2 - 4x + 7$	2	B1 for $[(2x-1)^2] = 4x^2 - 2x - 2x + 1$
(f)	x	1	
(g)	$g^{-1}(x) = g(x)$	1	
(h)	fh(x)	1	

				4	P. Mynaya Marins
Page 8	Mark Scheme Cambridge IGCSE – October/November 2015			Syllabus	P. Marie
				0580	43 9/1/20 75
					43 Msc/O1/0
10	A -13, -20	1			Od, COM
	-7n + 22 oe	2	SC1 for $-7n + k$ or kn	a + 22 oe	

10	A -13, -20	1	
	-7n + 22 oe	2	SC1 for $-7n + k$ or $kn + 22$ oe
	$\mathbf{B} = \frac{9}{22}, \frac{10}{23}$	1	
	$\frac{n+4}{n+17}$ oe	2	B1 for $n + 4$ oe or $n + 17$ oe seen, but not in wrong position
	C 26, 37	1	
	$n^2 + 1$ oe	1	
	D 162, 486	1	
	$2 \times 3^{n-1}$ oe	2	SC1 for $k \times 3^{n+p}$ [k, p integers]
			Accept $2 \times \frac{3^n}{3}$