## UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

**International General Certificate of Secondary Education** 

## MARK SCHEME for the October/November 2006 question paper

## **0580, 0581 MATHEMATICS**

**0580/03, 0581/03** Paper 3 (Core), maximum raw mark 104

This mark scheme is published as an aid to teachers and students, 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.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes must be read in conjunction with the question papers and the report on the examination.

The grade thresholds for various grades are published in the report on the examination for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses.

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CIE is publishing the mark schemes for the October/November 2006 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

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Page 2	Mark Scheme	Syllabu
	IGCSE - OCT/NOV 2006	0580, 0581

1 (a) (i)   35	Qu.	Answer	Marks	Comments	100
					00
(iv) 2 0 3 0 3 7 1 3 accept any combination (v) 2 2 1 1 1			1		00
(v) 2 2 1 1 2 1 2 2 2 1 1 2 2 2 1 1 2 2 2 2 1 1 2		45	1		
(vf)         24         1           (b)(i)         Correct arrangement of triangles drawn.         1         accept if only 1 internal line missing           (iii)         16 25 36         2         1 mark for 2 correct           (iii)         10000 or 1 x 10²         1         Not 100²           (iv)         7° or n x n         1         accept train accept x²           (v)         Square (numbers)         1         accept squares, squared           1         2 (a)         4 - 4 - 10         3         1 for each correct entry           (b)         8 correctly plotted points, within ½ square.         P3ft         P2 for 6 or 7 correct. ft         P1 for 4 or 5 correct. ft           C1         Allow small errors in the points provided shape is maintained.         must be from (0.5, -9) to curve at least           (c)         x = 0.5 drawn.         1         must be from (0.5, -9) to curve at least           (d)         2.2 to 2.4         1ft         must be from (0.5, -9) to curve at least           (e)         y = 1 drawn.         1         must be from (0.5, -9) to curve at least           (f)         (x = ) -0.7 to -0.5         1         1         must be from (0.5, -9) to curve at least           (i)         1 28.5         1.         Follow through their (a)(i)	(iv)	2 or 3 or 37	1	accept any combination	
	(v)	2	1		,
(ii)         16 25 36         2         1 mark for 2 correct           (iii)         1 0000 or 1 x 10 <sup>4</sup> 1         Not 100 <sup>2</sup> (iv) $7^3$ or $n \times n$ 1         accept t = $n^2$ etc. do not accept $x^2$ (v)         Square (numbers)         1         accept t = $n^2$ etc. do not accept $x^2$ (v)         Square (numbers)         1         accept t = $n^2$ etc. do not accept $x^2$ (v)         Square (numbers)         1         accept t = $n^2$ etc. do not accept $x^2$ (v)         Square (numbers)         1         accept t = $n^2$ etc. do not accept $x^2$ (v)         Square (numbers)         1         accept t = $n^2$ etc. do not accept $x^2$ (iii)         4 -4 -10         3         1 for each correct entry           P2 for 6 or 7 correct. ft         P1 for 4 or 5 correct. ft         P1 for 4 or 5 correct. ft           Hollow small errors in the points provided shape is maintained.         P1 for 4 or 5 correct. ft           Hollow small errors in the points provided shape is maintained.         In the state of the small errors in the points provided shape is maintained.           (i) $x = 1$ drawn.         1         must touch curve as min. length           (i) $x = 1$ drawn.         1         must touch curve as min. length </th <td></td> <td>24</td> <td>1</td> <td></td> <td></td>		24	1		
(ii)         16 25 36         2         1 mark for 2 correct           (iii)         10000 or 1 x 10 <sup>4</sup> 1         Not 100 <sup>2</sup> (iv) $7^2$ or $n \times n$ 1         accept t = $n^2$ etc. do not accept $x^2$ (v)         Square (numbers)         1         accept t = $n^2$ etc. do not accept $x^2$ (v)         Square (numbers)         1         accept t = $n^2$ etc. do not accept $x^2$ (v)         Square (numbers)         1         accept t = $n^2$ etc. do not accept $x^2$ (v)         Square (numbers)         1         accept t = $n^2$ etc. do not accept $x^2$ (v)         Square (numbers)         1         accept t = $n^2$ etc. do not accept $x^2$ (iii)         4         -4 - 4 - 10         3         1 for each correct entry           P2 for 6 or 7 correct. ft         P1 for 4 or 5 correct. ft         P1 for 4 or 5 correct. ft           Allow small errors in the points provided shape is maintained.         P1 for 4 or 5 correct. ft           H ft         Allow small errors in the points provided shape is maintained.           (i) $x = 1$ drawn.         1         must be from (0.5, -9) to curve at least           (i) $x = 1$ drawn.         1         must touch curve as min. length           (i)	(b) (i)	Correct arrangement of triangles drawn.	1	accept if only 1 internal line missing	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			2		
(v)         Square (numbers)         1         accept squares, squared         12           2         (a)         -4         -4         -10         3         1 for each correct entry           (b)         8 correctly plotted points, within 1/2 square.         3         1 for 4 or 5 correct. ft P1 for 4 or 4 or 5 correct. ft P1 for 4 or	(iii)		1		
12   2   (a)	(iv)	$n^2$ or $n \times n$	1	accept $t = n^2$ etc. do not accept $x^2$	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	(v)	Square (numbers)	1	accept squares, squared	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$					12
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	2 (a)	<del>-4 -4 -10</del>	3	1 for each correct entry	
8 correctly plotted points, within $\frac{1}{2}$ square. Smooth curve through 8 points  C1 P1 for 4 or 5 correct. ft Allow small errors in the points provided shape is maintained.  (c) $x = 0.5$ drawn.  1 must be from $(0.5, -9)$ to curve at least  (d) 2.2 to 2.4  1ft		1			
Smooth curve through 8 points	\ <del>-</del> '/	8 correctly plotted points, within $\frac{1}{2}$ square.			
Co   X = 0.5 drawn.   1   must be from (0.5, -9) to curve at least		۷	C1		
(c) $x = 0.5$ drawn.       1       must be from $(0.5, -9)$ to curve at least         (d) $2.2$ to $2.4$ 1ft       must touch curve as min. length         (e) $y = 1$ drawn.       1       must touch curve as min. length         (f) $(x = ) - 0.7$ to $- 0.5$ to $1.7$ 1       1 $(x = ) 1.5$ to $1.7$ 1 $(x = ) 1.5$ to $1.7$ 1         3       (a) (i) $128.571$		Smooth curve through a points		· ·	
	(c)	x = 0.5 drawn.	1		
(e)         y = 1 drawn.         1         must touch curve as min. length           (f)         (x =) -0.7 to -0.5         1           (x =) 1.5 to 1.7         1         1           3         (a) (i)         128.5 to 1.7         1           (ii)         128.6         1 ft         Follow through their (a)(i).           (b) (i)         x + 3y + 80 + 95 = 360 (or better)         1         Both marks may be gained in (b)(i)           (iii)         x + 3y = 185 oe         1         Both marks may be gained in (b)(i)           (iii)         40         2 ft         M1 for x correctly substituted into the linear equation. Follow through their (b)(ii) provided linear in x and y.           (c) (i)         180° or angle sum of triangle mentioned         1         SC1 for a = 20 b = 70           (ii)         Angle in a semi-circle mentioned.         1         SC1 for a = 20 b = 70           (iii)         (a =) 70 (b =) 20         1         2 x their value for b provided 0 < b < 55.				least	
(f) $(x =) -0.7 \text{ to } -0.5$ 1 $(x =) 1.5 \text{ to } 1.7$ 1         3 (a) (i) $128.571$ or $128^{\circ}34'$ ()       2       M1 for $180 - 360/7$ oe         (ii) $128.6$ 1 ft       Follow through their (a)(i).         (b) (i) $x + 3y + 80 + 95 = 360$ (or better)       1       Both marks may be gained in (b)(i)         (iii) $40$ 2 ft       M1 for $x$ correctly substituted into the linear equation. Follow through their (b)(ii) provided linear in $x$ and $y$ .         (c) (i) $180^{\circ}$ or angle sum of triangle mentioned       1       SC1 for $a = 20$ $b = 70$ (iii) $(a =) 70$ ( $b =) 20$ 1       SC1 for $a = 20$ $b = 70$ (iv) $40$ 1ft $2 \times$ their value for $b$ provided $0 < b < 55$ .         (iv) $40$ 1ft $2 \times$ their value for $b$ provided $0 < b < 55$ .         (iv) $40$ 1ft $2 \times$ their value for $b$ provided $0 < b < 55$ .         (iv)       40       1ft $2 \times$ their value for $b$ provided $0 < b < 55$ .         (ii)       Enlargement (Scale Factor) 3 (Centre) (2, 4)       B1         (iii)       Reflection (in the line) $x = 4$ B1         (b) (i)       Correct translation drawn       2       SC1 for translation by					
(x =) 1.5 to 1.7	(e)		1	must touch curve as min. length	
12   3 (a) (i)   128.571 or 128° 34′ ()   2   M1 for 180 – 360/7 oe	(f)		1		
3 (a) (i) $128.571$ or $128^{\circ}34'()$ 2       M1 for $180 - 360/7$ oe         (ii) $128.6$ 1 ft       Follow through their (a)(i).         (b) (i) $x + 3y + 80 + 95 = 360$ (or better)       1         (iii) $x + 3y = 185$ oe       1       Both marks may be gained in (b)(i)         (iii) $40$ 2 ft       M1 for $x$ correctly substituted into the linear equation. Follow through their (b)(ii) provided linear in $x$ and $y$ .         (c) (i) $180^{\circ}$ or angle sum of triangle mentioned       1         (iii)       Angle in a semi-circle mentioned.       1         (iiii)       (a = $70$ 1         (b = $20$ 1         (iv)       40         1ft $2 \times 10^{\circ}$ (because of the provided of $0 \times 10^{\circ}$ ) (because of $0 \times 10^{\circ}$ ) (centre) (2, 4)         (ii)       Enlargement (Scale Factor) 3 (Centre) (2, 4)       B1         (iii)       Reflection (in the line) $x = 4$ B1         (b) (i)       Correct translation drawn       2       SC1 for translation by the vector. $(-3)(1)(2)(k)(-3)$ (iii)       Correct rotation drawn       2       SC1 for any $180^{\circ}$ rotation.		(x =) 1.5 to 1.7	1		
(ii) $128.6$ 1 ftFollow through their (a)(i).(b) (i) $x + 3y + 80 + 95 = 360$ (or better)1(ii) $x + 3y = 185$ oe1Both marks may be gained in (b)(i)(iii) $40$ 2 ftM1 for $x$ correctly substituted into the linear equation. Follow through their (b)(ii) provided linear in $x$ and $y$ .(c) (i) $180^{\circ}$ or angle sum of triangle mentioned1(iii)Angle in a semi-circle mentioned.1(iii) $(a = )70$ 1SC1 for $a = 20$ $b = 70$ (iv) $40$ 1ft $2 \times$ their value for $b$ provided $0 < b < 55$ .(iv) $40$ 1ft $2 \times$ their value for $b$ provided $0 < b < 55$ .4(a) (i)Enlargement (Scale Factor) 3 (Centre) (2, 4)B1(iii)Reflection (in the line) $x = 4$ B1(b) (i)Correct translation drawn2SC1 for translation by the vector. $-3 \times 10^{\circ} (a + 1) \times 10^{\circ} (a $					12
(ii) $128.6$ 1 ftFollow through their (a)(i).(b) (i) $x + 3y + 80 + 95 = 360$ (or better)1(ii) $x + 3y = 185$ oe1Both marks may be gained in (b)(i)(iii) $40$ 2 ftM1 for $x$ correctly substituted into the linear equation. Follow through their (b)(ii) provided linear in $x$ and $y$ .(c) (i) $180^{\circ}$ or angle sum of triangle mentioned1(ii)Angle in a semi-circle mentioned.1(iii) $(a = 70)$ 1SC1 for $a = 20$ $b = 70$ (iv) $40$ 1ft $2 \times$ their value for $b$ provided $0 < b < 55$ .(iv) $40$ 1ft $2 \times$ their value for $b$ provided $0 < b < 55$ .(iii)Enlargement (Scale Factor) 3 (Centre) $(2, 4)$ B1.(ii)Reflection (in the line) $x = 4$ B1.(b) (i)Correct translation drawn2SC1 for translation by the vector. $-3 \times 1 \times $	3 (a) (i)	128.571 or 128° 34′ ()	2	M1 for 180 – 360/7 oe	
(b) (i) $x + 3y + 80 + 95 = 360$ (or better)1(ii) $x + 3y = 185$ oe1Both marks may be gained in (b)(i)(iii) $40$ 2 ftM1 for $x$ correctly substituted into the linear equation. Follow through their (b)(ii) provided linear in $x$ and $y$ .(c) (i) $180^{\circ}$ or angle sum of triangle mentioned1(ii)Angle in a semi-circle mentioned.1(iii) $(a = )70$ ( $b = )20$ 1(iv) $40$ 1ft $2 \times$ their value for $b$ provided $0 < b < 55$ .(iv) $40$ 1ft $2 \times$ their value for $b$ provided $0 < b < 55$ .(ii)Enlargement (Scale Factor) 3 (Centre) $(2, 4)$ (iii)B1 (Scale Factor) 3 (Centre) $(2, 4)$ (iiii)B1 (Scale Factor) $(2, 4)$ (iiii)B2 (Scale Factor) $(2, 4)$ (iiii)B2 (Scale Factor) $(2, 4)$ (iiii)B2 (Scale			1 ft	Follow through their (a)(i).	
(ii) $x + 3y = 185$ oe1Both marks may be gained in <b>(b)(i)</b> (iii) $40$ 2 ftM1 for $x$ correctly substituted into the linear equation. Follow through their <b>(b)(ii)</b> provided linear in $x$ and $y$ .(c) (i) $180^{\circ}$ or angle sum of triangle mentioned1(ii)Angle in a semi-circle mentioned.1(iii) $(a = )70$ $(b = )20$ 1(iv) $40$ 1ft $2 \times$ their value for $b$ provided $0 < b < 55$ .(iv) $40$ 1ft $2 \times$ their value for $b$ provided $0 < b < 55$ .(ii)Enlargement $(Scale Factor) 3$ $(Centre) (2, 4)$ 81 $B1$ 	(b) (i)	x + 3y + 80 + 95 = 360 (or better)	1		
(iii) $40$ $2 \text{ ft}$ M1 for $x$ correctly substituted into the linear equation. Follow through their (b)(ii) provided linear in $x$ and $y$ .(c) (i) $180^{\circ}$ or angle sum of triangle mentioned $1$ (ii)Angle in a semi-circle mentioned. $1$ (iii) $(a =) 70$ $(b =) 20$ $1$ $1$ SC1 for $a = 20$ $b = 70$ (iv) $40$ $1ft$ $2 \times$ their value for $b$ provided $0 < b < 55$ .12 $4$ $6$ $1$ $1$ 4 (a) (i)Enlargement (Scale Factor) 3 (Centre) $(2, 4)$ $(2, 4)$ $1$ $1$ (ii)Reflection (in the line) $x = 4$ $1$ $1$ (b) (i)Correct translation drawn $2$ SC1 for translation by the vector. $-3 \times 2 \times 1 \times 1$			1	Both marks may be gained in (b)(i)	
Follow through their (b)(ii) provided linear in $x$ and $y$ .    (c) (i)   180° or angle sum of triangle mentioned   1	(iii)		2 ft		
Inear in $x$ and $y$ .   Ine	, ,			the linear equation.	
(c) (i) $180^{\circ}$ or angle sum of triangle mentioned1(ii)Angle in a semi-circle mentioned.1(iii) $(a = )70$ $(b = )20$ 1SC1 for $a = 20$ $b = 70$ (iv) $40$ 1ft $2 \times$ their value for $b$ provided $0 < b < 55$ .4 (a) (i)Enlargement (Scale Factor) 3 (Centre) $(2, 4)$ B1 B1 B1 (ii).(iii)Reflection (in the line) $x = 4$ B1 B1 B1 Correct translation drawn2SC1 for translation by the vector. $\begin{pmatrix} -3\\2 \end{pmatrix} \begin{pmatrix} 1\\-1.5 \end{pmatrix} \begin{pmatrix} 2\\k\\-3 \end{pmatrix}$ (ii)Correct rotation drawn2SC1 for any $180^{\circ}$ rotation.					
(ii)Angle in a semi-circle mentioned.1(iii) $(a = )$ 70 $(b = )$ 201SC1 for $a = 20$ $b = 70$ (iv)401ft $2 \times$ their value for $b$ provided $0 < b < 55$ .4 (a) (i)Enlargement (Scale Factor) 3 (Centre) $(2, 4)$ B1.(ii)Reflection (in the line) $x = 4$ B1.(b) (i)Correct translation drawn2SC1 for translation by the vector.(iii)Correct rotation drawn2SC1 for any 180° rotation.				linear in x and y.	
(iii) $(a =) 70$ $(b =) 20$ 1 $2 \times their value for b provided$ $0 < b < 55$ .  4 (a) (i) Enlargement $(Scale Factor) 3$ $(Centre) (2, 4)$ $(Iii)$ Reflection $(Iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii$			1		
(iv) 40 11t $2 \times$ their value for $b$ provided $0 < b < 55$ . 12  4 (a) (i) Enlargement (Scale Factor) 3 (Centre) $(2, 4)$ B1 (ii) Reflection (in the line) $x = 4$ B1 (b) (i) Correct translation drawn 2 SC1 for translation by the vector. $\begin{pmatrix} -3 \\ 2 \end{pmatrix} \begin{pmatrix} 1 \\ -1.5 \end{pmatrix} \begin{pmatrix} 2 \\ k \\ -3 \end{pmatrix}$ (ii) Correct rotation drawn 2 SC1 for any 180° rotation.					
(iv) 40 1ft $2 \times \text{their value for } b \text{ provided} \\ 0 < b < 55.$ 12  4 (a) (i) Enlargement (Scale Factor) 3 (Centre) $(2, 4)$ B1 .  (ii) Reflection (in the line) $x = 4$ B1  (b) (i) Correct translation drawn 2 SC1 for translation by the vector. $\begin{pmatrix} -3 \\ 2 \end{pmatrix} \begin{pmatrix} 1 \\ -1.5 \end{pmatrix} \begin{pmatrix} 2 \\ k \\ -3 \end{pmatrix}$ (ii) Correct rotation drawn 2 SC1 for any 180° rotation.	(iii)			SC1 for $a = 20$ $b = 70$	
4 (a) (i) Enlargement (Scale Factor) 3 (Centre) $(2, 4)$ B1 .  (ii) Reflection (in the line) $x = 4$ B1 (b) (i) Correct translation drawn 2 SC1 for translation by the vector.					
4 (a) (i) Enlargement (Scale Factor) 3 (Centre) $(2, 4)$ B1 .  (ii) Reflection (in the line) $x = 4$ B1  (b) (i) Correct translation drawn 2 SC1 for translation by the vector. $\begin{pmatrix} -3 \\ 2 \end{pmatrix} \begin{pmatrix} 1 \\ -1.5 \end{pmatrix} \begin{pmatrix} 2 \\ k \end{pmatrix} \begin{pmatrix} k \\ -3 \end{pmatrix}$ (ii) Correct rotation drawn 2 SC1 for any 180° rotation.	(iv)	40	1ft		
4 (a) (i) Enlargement (Scale Factor) 3 (Centre) $(2, 4)$ B1 .  (ii) Reflection (in the line) $x = 4$ B1 SC1 for translation by the vector.  (b) (i) Correct translation drawn 2 SC1 for any 180° rotation.				0 < b < 55.	46
(Scale Factor) 3 (Centre) (2, 4)  (ii) Reflection (in the line) $x = 4$ (b) (i) Correct translation drawn  (ii) Correct rotation drawn $ \begin{array}{cccccccccccccccccccccccccccccccccc$					12
(Scale Factor) 3 (Centre) (2, 4)  (ii) Reflection (in the line) $x = 4$ (b) (i) Correct translation drawn  (iii) Correct rotation drawn $ \begin{array}{cccccccccccccccccccccccccccccccccc$	4 (a) (i)				
(ii) Reflection (in the line) $x = 4$ (b) (i) Correct translation drawn  (ii) Correct rotation drawn  B1  B1  SC1 for translation by the vector. $ \begin{pmatrix} -3 \\ 2 \end{pmatrix} \begin{pmatrix} 1 \\ -1.5 \end{pmatrix} \begin{pmatrix} 2 \\ k \end{pmatrix} \begin{pmatrix} -3 \end{pmatrix} $ (ii) Correct rotation drawn  2 SC1 for any 180° rotation.					
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(b) (i)Correct translation drawn2SC1 for translation by the vector. 	(ii)				
(ii) Correct rotation drawn					
(ii) Correct rotation drawn 2 SC1 for any 180° rotation.	(b) (i)	Correct translation drawn	2		
(ii) Correct rotation drawn 2 SC1 for any 180° rotation.				$\left( -3 \right) \left( 1 \right) \left( 2 \right) \left( k \right)$	
(ii) Correct rotation drawn 2 SC1 for any 180° rotation.				$  \left( 2 \right) \left( -1.5 \right) \left( k \right) \left( -3 \right)$	
SC1 for 90° or 270° rotation about	/ii\	Correct rotation drawn	2		
	(")	Correct rotation drawn		SC1 for 90° or 270° rotation about	
(-1, -2)					
9			-	· · · · · · · · · · · · · · · · · · ·	+

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		5
<b>5</b> (-) 00		THE 05 40 40

5	(a)	90	2	M1 for 0.5 × 18 × 10	3%
	(b)	14.3 art	2	M1 for 10 × tan 550e	7/2
	(c)	18.5 to 18.6	3	M1 for $0.5 \times 10 \times \text{their}$ (b) or M1 18	00
				- their (b)	hbridge.
				M1 $\frac{1}{2}$ x 10 x their BX	
				M1 for	
				Their <b>(a)</b> – $(0.5 \times 10 \times \text{their } (b))$	
	(d)	20.6 art	2	M1 for $\sqrt{(18^2 + 10^2)}$ oe	
	` '			,	9
6	(a)	750cao	3	M1 Figs 10 ÷ figs 20 and	
				figs 15 ÷ figs 10. OR M1 Figs 10 x	
				Figs 15 and Figs 20 x Figs 10	
				M1 dep bricks in length × bricks in	
				height.	
				M1 dep. area of wall ÷ area of brick.	
	(b) (i)	756	2	If MO then SC1 for Figs 75 M1 for 720 × 1.05 oe	
	(ii)	8	1ft	Their (b)(i) rounded up to the	
	(")		110	number of hundreds	
	(c) (i)	10	1		
	(ii)	2	1 1ft	Their cement buckets ÷ 3.5 and	
	(11)	2	1110	rounded up to next whole number	
				Tourided up to flext whole flumber	9
7	(a)	_1	2	1.	
<b>'</b>	(a)	_1	2	SC1 for 1 SC1 for $-\frac{\kappa}{\kappa}$	
	(b)	(m =) 2	1	K	
	(2)	(c =) 3	1		
	(c) (i)	Correct line drawn.	1	must cross both axes and line A	
	(ii)	y = 2x - 3 oe	2ft	SC1 for $m = 2$ or $c = -3$ . Follow	
				through their line for 2 and SC1.	
					7
8	(a) (i)	3 6 8 7 6 1 1 2	3	2 for 6 or 7 correct -1 if tally marks 1 for 4 or 5 correct	
	(ii)	5.71 art	3	M1 for evidence of	
				size x frequency calculated for the	
				sizes.	
	(iii)	7 cao	1	M1dep for sum of at least 5 ÷ 34	
	(iii)	7 cao 5 cao	1		
	(v)	5.5	2	M1 for evidence of finding the	
	(-/		-	middle shoe size. (Not just an	
				answer of 5 or 6)	
	(vi)	17.6 art	2ft	M1 for their 6 ÷ 34 × 100 or 17.65	
	(vii)	54 or 53	2ft	M1 for their 6 $\div$ 34 $\times$ 306 or	
	4 > 42	10.05.10.0	<u> </u>	'53.8'. or 53.9	
	(b) (i)	12 25 19 2	2	1 mark for 2 or 3 correct or all	
	/i:\	5 and 6	1ft	correct but not added Their class with the highest	
	(ii)	J and 0	'''	frequency. –1 for tally marks	
				inequency. — From tally marks	17
					17

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			7	
9 (a)	Correct accurate drawing.	3	M1 for angle = 90° = BAC.	Abridge Co
	(lengths $\pm$ 0.2 cm, angles $\pm$ 1°)		M1 for AB = 7.5cm and	70
			AC = 5.5 cm.	00
			A1 for completed triangle.	.C
4 4			(Dependent on at least one M)	
(b)(i)	233° to 235°	2ft	From their diagram.	
			M1 for their angle BCA measured	`
			correctly (± 1°)	
(ii)	182 to 190	2ft	Their BC × 20.	
			M1 for their BC (correct is 9.1 cm to	
			9.5 cm)	
(iii)	2 (hours) 42 (mins)	4	SC3 for 2.7(0)	
			M1 for 20 × 1.85	
			M1 for 100 ÷ their 37	
			SC2 for 2 hr 7 mins with no	
			method.	
			B1 for their time correctly changed	
			to hours and minutes.	
(iv)	24	2	M1 for 18 ÷ 0.75 oe	
(v)	Correct circle drawn	2	M1 for partial circle (crossing AB	
			and AC)	
(vi)	84 to 100	2ft	M1 for 4.2 to 5.0	
			Follow through their diagram,	
			dependent on intersections seen on	
			BC	
				17

Total marks 104