			T ~	• •			
1 (a)			Correct mirror $x = -1.5$	line	1	B1	Correct line drawn at $x = -1.5$ allow freehand with intention to draw at -1.5
(b)			Shape drawi	1	2	B2	for correct shape with vertices at $(-1,2)$, $(-1,4)$, $(-3,2)$ and $(-3,5)$
						(B1	for a correct orientation or 90° clockwise turn about correct
							point)
							Total 3 marks
2 (a)			(3,5) (5,5) (5,5)	8)	2	B2	If not B2 then award
							B1 for a reflection in $x = 2$
							[(1,-1)(-1,-1)(-1,-4)] or for correct shape in the correct orientation
(b)					3	B1	Rotation (with none of reflection, translation, enlargement, mirrored,
							flipped or moved (up, right, left, down etc) stated)
,						B1	(centre) (0,0) or origin (O) (award
							if no vector or equation of line or SF mentioned)
			Rotation of 90 anticlockwise at			B1	90° anticlockwise or 270° clockwise
			(0,0)				Total 5 marks
3 a	Rotation (0, 0)		B1 or O or orig	2in			
	90° clockwise	3			ks if mo	re than	one transformation is described
b	Shape R in correct position	2	B2 Vertices at	(-4, 1	(-4, 4)	(-5, 4)	(-5, 2) (-6, 2) (-6, 1)
	concer position						$x = k$ where $k \neq -1$ OR at least 4
			vertices in	the coi	rect pos	ition	
							Total 5 marks
4	Trape	i	n 2 B2				
•		ith	If not	B2 the	n award		
	(6, 3) (8, 6)	(8, 3) B1 for		of correct		nd orientation or
	(0, 0)	(,, 0) 5011	Politics	promote	01100(1)	Total 2 marks
5			Rotation 180° and (0, 0)		2	B1	Rotation (with none of reflection, translation, enlargement, mirrored, flipped or moved stated)
						B1	180° centre (0, 0) or <i>O</i> (award if no vector or equation of
							line or SF mentioned)
							(B2 for enlargement SF –1 centre <i>O</i>)
							Total 2 marks
6 (a)		sha	pe with vertices	2	B2	if not	B2 then award
()			(6, 4)	_		B1 for	
			(10, 5) (11, 1)				ect reflection in a vertical line
			(9,3)			or	orrect points of the correct shape
						or	orrect points of the correct shape orrect reflection $y = 6$
(b)			Enlargement	3	B1	Enlarg	ement (with none of reflection,
			~ 1 0			moved	n, translation, mirrored, flipped or l (up, right, left, down etc) stated)
			Scale factor 3		B1		factor 3 or sf 3
			Centre] (0, 0)		B1	(with 1	e] (0, 0) or origin or <i>O</i> no column vector or equation of
						line)	Total 5 marks

Total 4 marks

7	(a)		vertices at (-9, 6) (-9, 9) (-3, 9) (-6, 6)	Sh	Shape in correct position								orienta	congruent shape in correct ation but wrong position
					Shape in correct				or qua	drilateral with 2 or 3 vertices				
	(b)		vertices at (7, 3) (10, 6) (13, 6) (13, 3)	Sh	Shape in correct position			B1						
	(c)			(enlargement			B1	for enlargement, enlarge, etc so long as r mention of rotation, reflection or					
				s	scale factor 2			B1		ation, flip, move etc. double, two times etc.				
				c	centre (- 3, 3)			B1	(-3, 3)) stated. Accept about, from etc.				
								-	with n	o mention of line, or column vector. Total 6 marks				
										Total o marks				
8	(a)				Reflection			2	B1	for reflection with no mention of				
					x = 1				B1	translate, rotate, enlarge, move for $x = 1$ with no mention of a vector, angle or scale factor				
	(b)				Rotation about			3	3 B1 for rotation with no mention					
					90° clocky				B1	translate, reflect, enlarge, move for 90° clockwise/270°				
										anticlockwise/–90° with no mention of a vector, line of				
										symmetry or scale factor				
									B1	for (centre =) (0,0), accept origin				
										or O with no mention of a vector, line of symmetry or scale factor				
										Do not accept $\begin{pmatrix} 0 \\ 0 \end{pmatrix}$ for centre				
	•									Total 5 marks				
9	(a)		enlargement, enlarge, enlarged		Enlargem	ent		3	B1	for enlargement with no mention of				
	(a)		chargement, charge, charged		Emargen	Emargement		,	Bi	translate, reflect, rotate, move, flip				
			scale factor 3, SF 3, ×3, factor of 3, 'three' times		Scale facto				B1	for (scale factor =) 3 with no				
			tiffee times							mention of a vector, line of symmetry or angle				
			allow (3, 0) 3, 0		Centre (3, 0				В1	for (centre =) (3, 0)				
- 10	Las	-						*.4						
10	(a)	Ro	tation, rotate, rotated (not turn)		rotation	2	B1			ion of reflection, translation, ove, flip etc				
					180° about (0, 0) or <i>O</i>		В1	oe with n	no ment	ion of a line, column vector or SF				
										turn about $(0, 0)$ or O' with no atements)				
								Alternat	ive: B2	for enlargement with centre O and SF				
										gement with no mention of other B1 for centre O and SF -1)				
	(b)	(-4	1, 1)(-6, 1)(-6, 3)(-5, 3)(-5, 4)(-4, 4)		A correct	2	B2	(B1 for a		et' shape reflected in any vertical line				
					shape				reflecti	from in the line $y = -1$				
								or reflection	n of sha	pe B in the line $x = -1$)				
										Total 4 marks				
11	(a)				Reflec	tion		2	B1	for reflection with no mention of				
					x = -	-1			B1	translate, enlarge, rotate, move for $x = -1$ with no mention of a				
	(b)				Triangle dra	awn :	with	2	B2	vector, SF, centre or angle for a correct enlargement				
	(0)				vertice				(B1	for an enlarged triangle scale				
					(4, 2) (4, 8	8) (8,	2)			factor 2 in wrong position or 2 out				
										of out 3 vertices in the correct position)				
	•									Total 4 marks				

12 (a)			2 B2	2 for a correct rotation
		X X X X X X X X X X X X X X X X X X X	(B	
(b)	Translation v	with vector $\begin{pmatrix} 4 \\ -2 \end{pmatrix}$	2 B1	reflection, rotation, enlargement, mirrored, turned or flipped stated) $\begin{pmatrix} 4 \\ -2 \end{pmatrix}$ (award if no equation of line or angle of rotation or centre of rotation or scale factor or centre of enlargement mentioned)
				Total 4 marks
13 (a)	Triangle d (-1, -3) (-1, -		B2	for a correct triangle with correct orientation and position If not B2 then award B1 for a correct triangle drawn with correct orientation in wrong position or triangle drawn with 2 out of 3
(b)	Triangle d	rawn at 1	B1	correct vertices
(0)	(-4, 4) (-4,			
				Total 3 marks
(b)	Enla scale	rgement, 2 factor 3 d (0,0)	(1, 2) (B1 fc and si rotate (-1, - B2 fo and (0 (B1 fc for en menti transla	d 90° clockwise about the origin 2) (-3, -2) (-3, -5)) r enlargement, scale factor 3
			from	or Origin or 0 stated. Accept about, etc. with no mention of line, or
			colun	m vector.) Total 4 marks
				1 Otal 4 marks
15	Triangle with (3, 6) (3, 9)		(B1	for a fully correct shape with correct orientation and in the correct position. for a shape of correct size and orientation or 2 or 3 points plotted correctly)
1				Total 2 marks

16 (b)	Enlargement	3	B1 with no mention of any other transformation or words such a move, flip, shift
	Scale factor 3		B1 with no mention of a vector, angle of rotation or line of
			symmetry
	Centre (0, 2)		B1