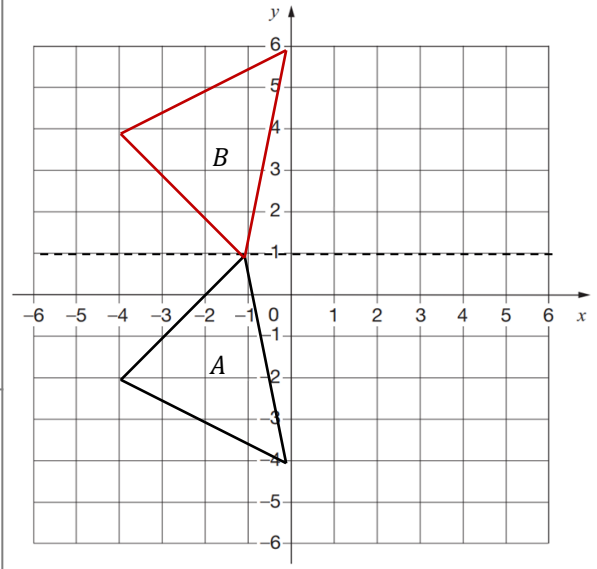
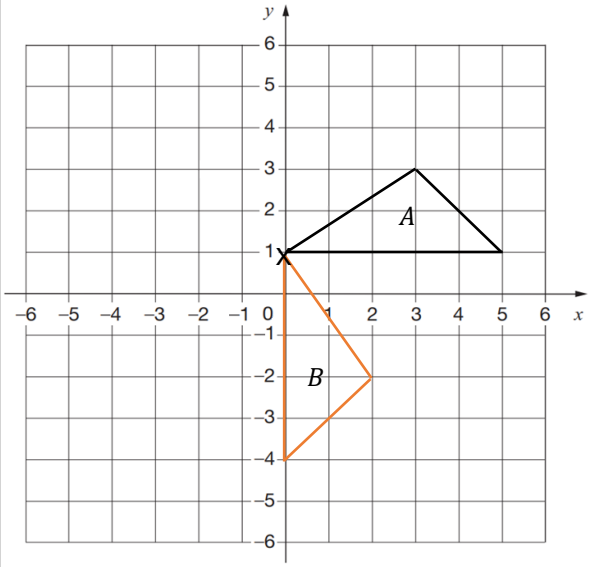
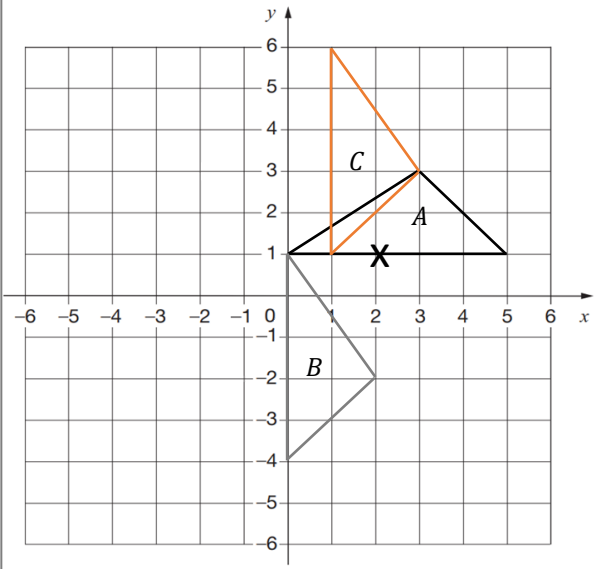
Invariant Points Mark Scheme		
1(a)		[1] Reflection line on $y = 1$
1(b)		[1] All points are equidistant from $y = 1$; reflection, not translation
		[1] Invariant point at $(-1,1)$
2(a)		[1] Some indication of where $(0,1)$ is.
		[1] Proper rotation of shape, $90°$ clockwise.
		[1] Invariant point $(0,1)$
2(b)		[1] Correct position of C [1] invariant point is $(3,3)$

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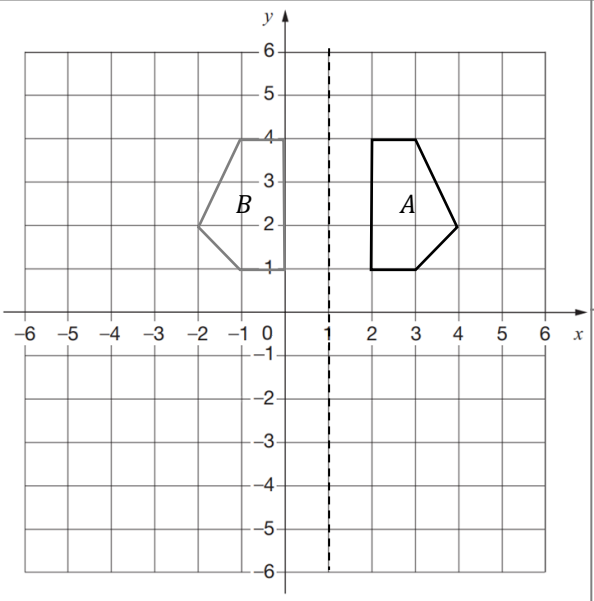
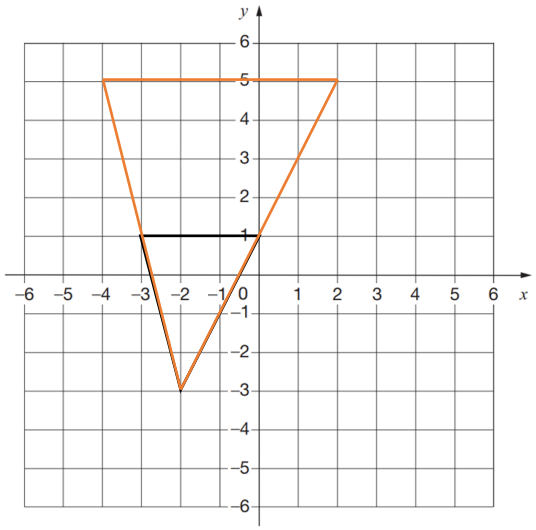
3(a)	The triangle will have one invariant point because only one point stays in place Optional, were the triangle to be rotated $360°$, it would be where it started.	[1]
3(b)	Shape is returned to same position. So all vertices are invariant. 4	[1]
4(a)		[1] Indication of $x = 1$ [1] All points on shape B maintain distance from $x = 1$
4(b)	Translation $\begin{pmatrix} 6 \\ 0 \end{pmatrix}$	[1]
5(a)		[1] Vertex at $(-2, -3)$ is unmoved [1] Other points are extended so that x and y coordinate are two times farther away from $(-2, -3)$
5(b)	One invariant point at $(-2, -3)$	[1]
6(a)	$(-1,3)$	[1]
6(b)	$(-1,3)$ and $(-5,3)$	[2] 1 mark for each correct coordinate
6(c)	$(-1,3)$ and $(-3,5)$	[2] 1 Mark for each correct coordinate

END

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