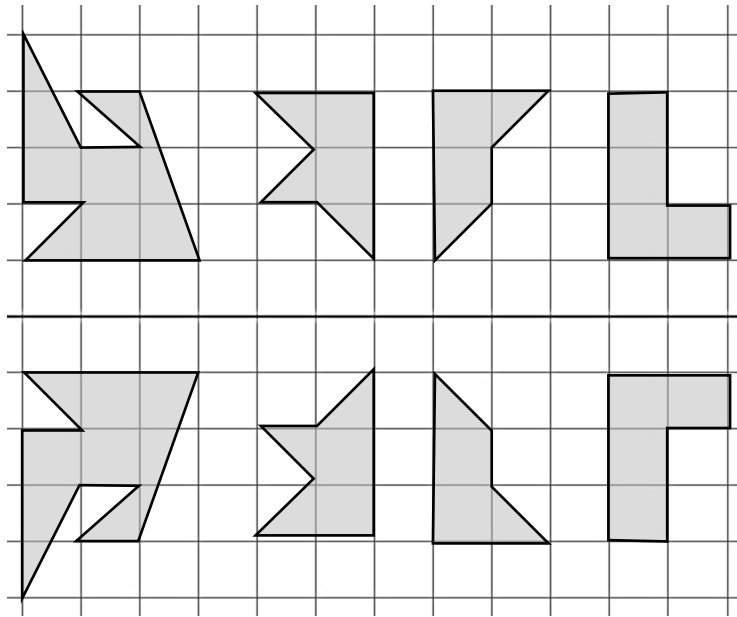


Transformations Mark scheme:		
1		
1(a)	Correct transformation in x-y coordinates from A to B	[2]
1(b)	Correct transformation in x-y coordinates from B to C	[2]
1(c)	Translation by the vector $\begin{pmatrix} -3 \\ -5 \end{pmatrix}$	[1] Correct x-translation [1] Correct y-translation
2		
2(a)	Correct transformation in x-y coordinates from D to E	[2]
2(b)	Correct transformation in x-y coordinates from E to F	[2]

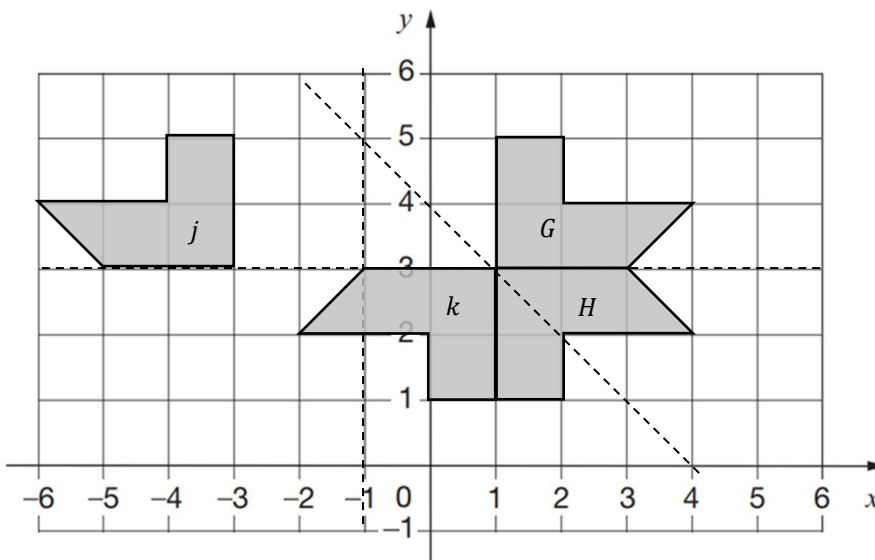
Turn over ►

3



[4]

4

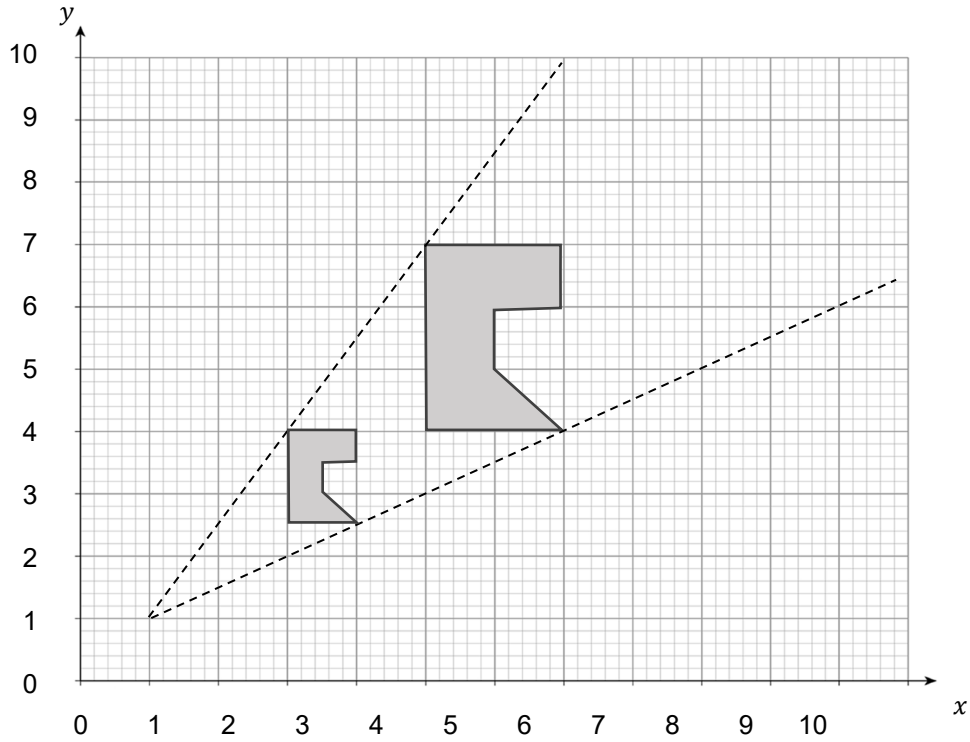


H, J and K

[3] A mark for each shape in the correct position

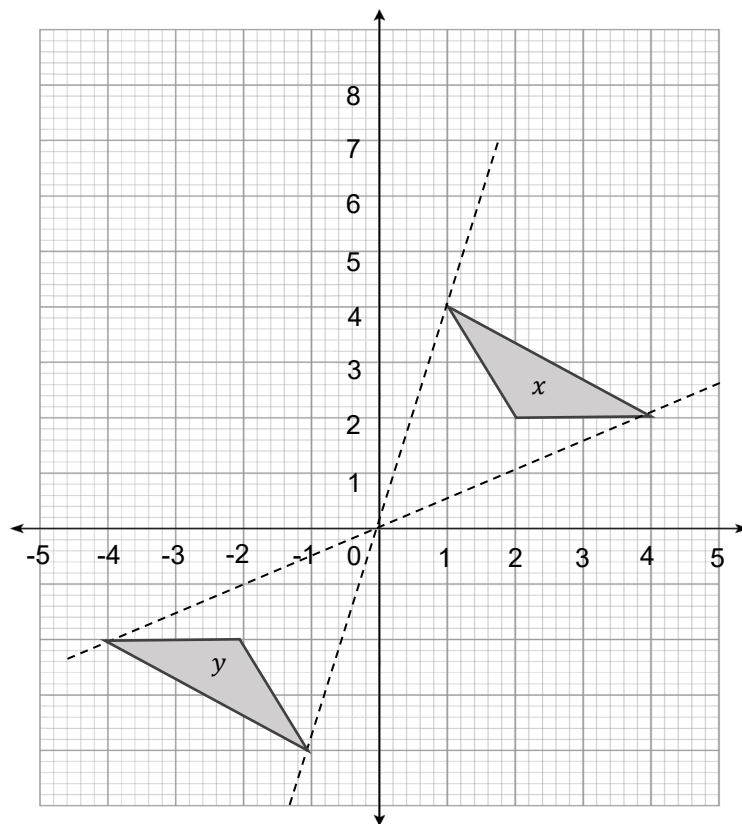
Turn over ►

5



[3] Correct size, position and centre of enlargement used

6

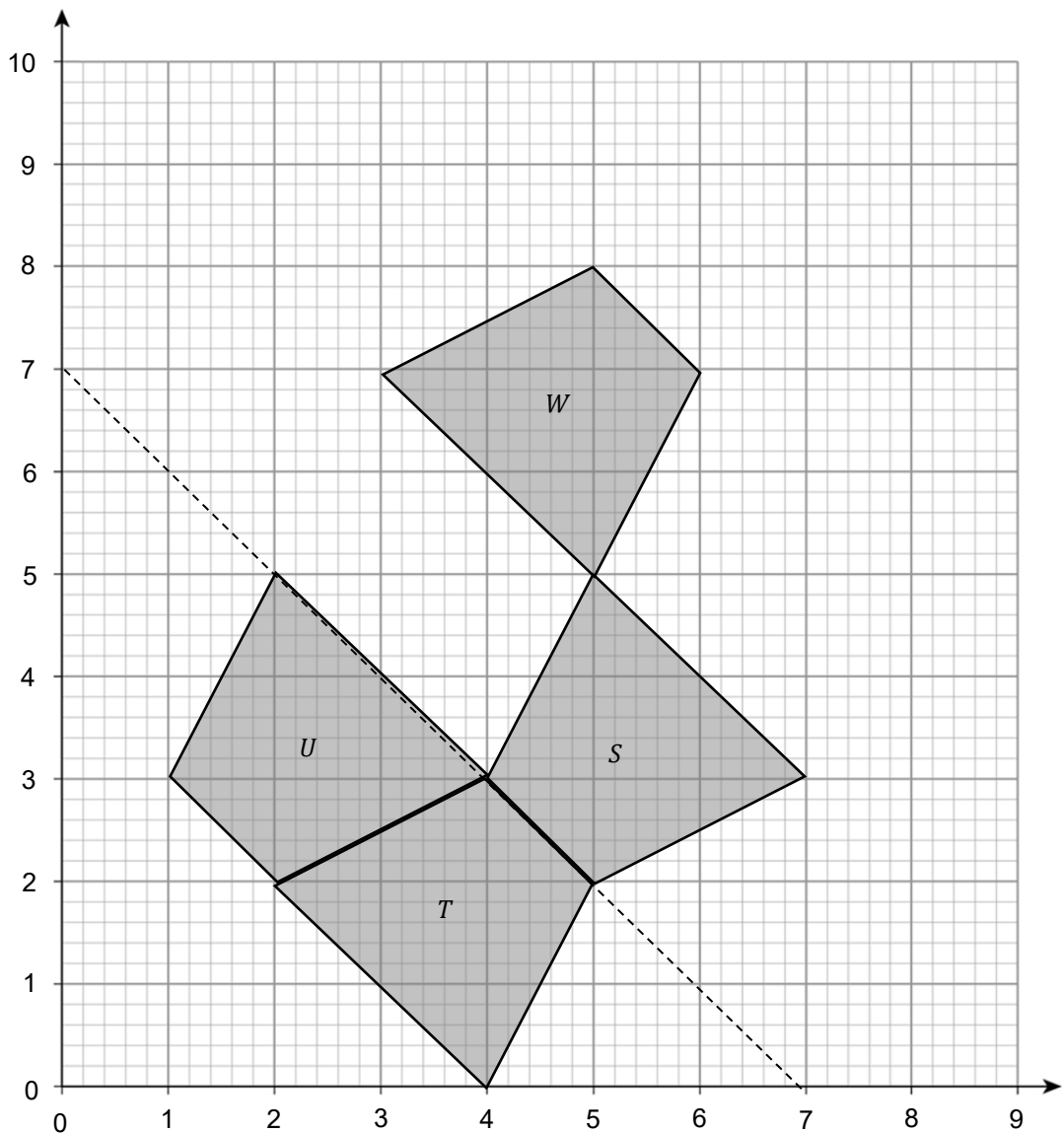


[3] Correct size, position and centre of enlargement used

Turn over ►

7(a)	Reflection in the line $x = 0$	[1] line $x = 0$ must be stated
7(b)	Reflection in the line $y = -\frac{1}{2}$	[1] line $y = -\frac{1}{2}$ must be stated
7(c)	Rotation of 180° about $(1, -1)$	[1] or Enlargement of -1 at $(1, -1)$
7(d)	Rotation of 180° about $(3, -0.5)$	[1] or Enlargement of -1 at $(3, -0.5)$
7(e)	Reflection in the line $y = x - 2$	[1] or Rotation of 180° about $(3.5, 1.5)$

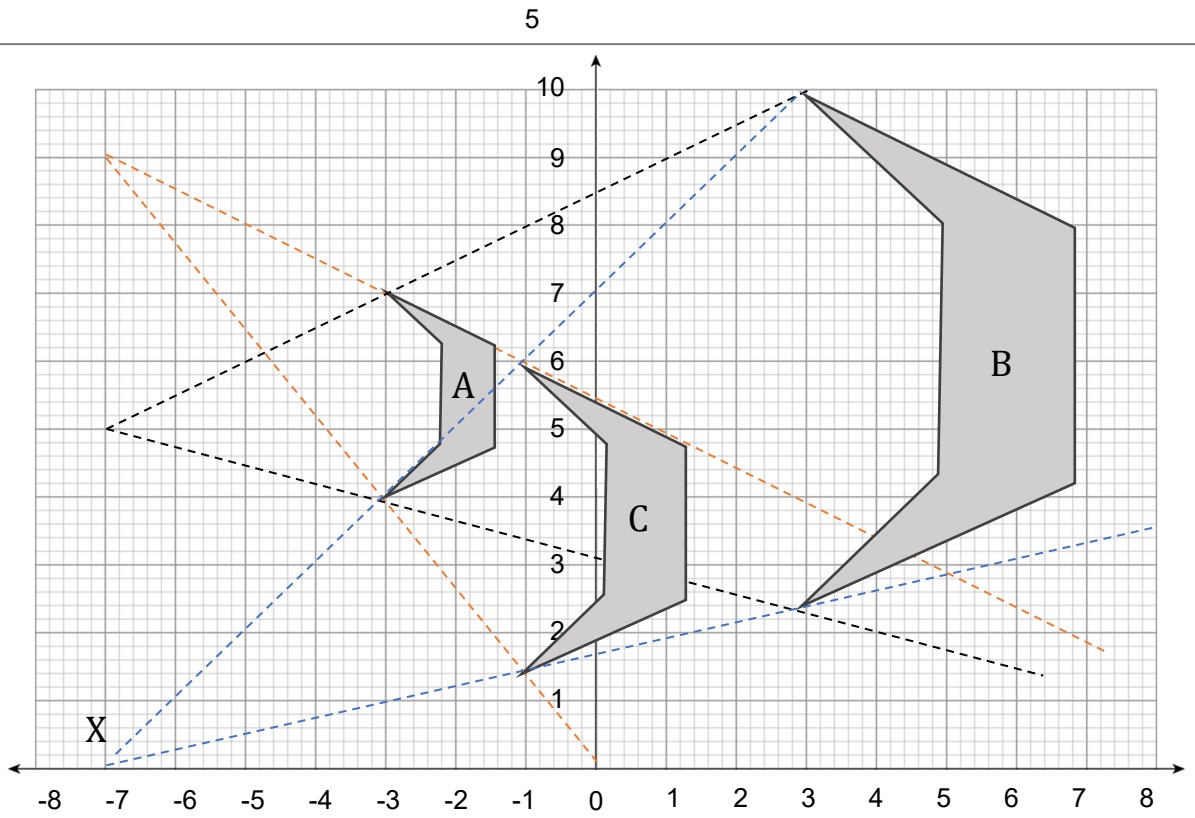
8

Invariant points $(5, 2)$, $(4, 2)$, $(5, 5)$

[6] 1 mark for each correct transformation and 1 mark for each correct invariant point given

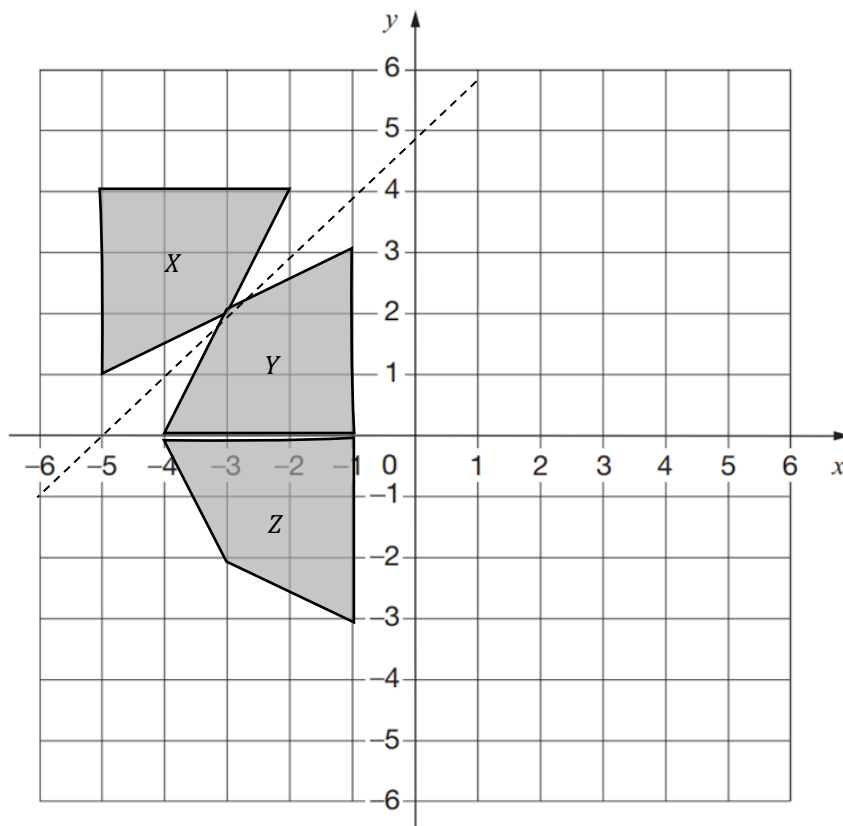
Turn over ►

9



[6] Award marks for part (b) and (c) if errors carried forward from part (a)

10



No, because translating a shape moves all of the points.

[5] Award marks for part (b) and (c) if errors carried forward from part (a)

END