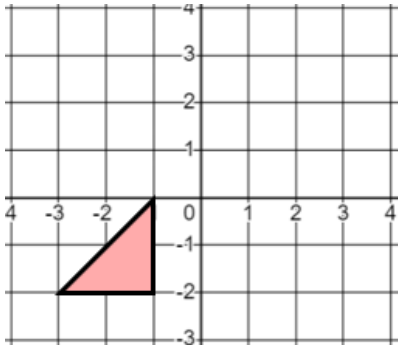


# Transforming Shapes

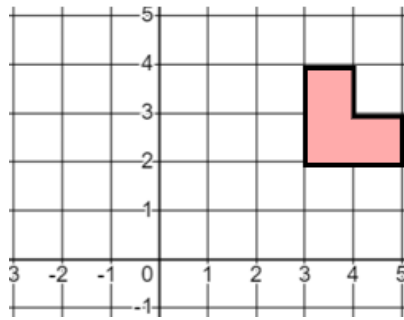
**(a)**

Translate the shape by  $\begin{pmatrix} 3 \\ 4 \end{pmatrix}$



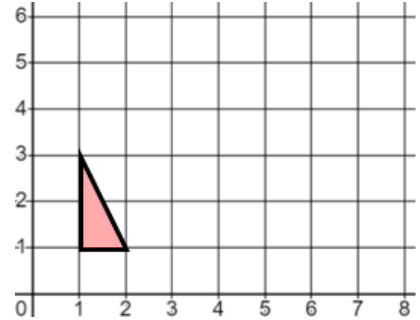
**(b)**

Reflect the shape in the line  $x = 2$



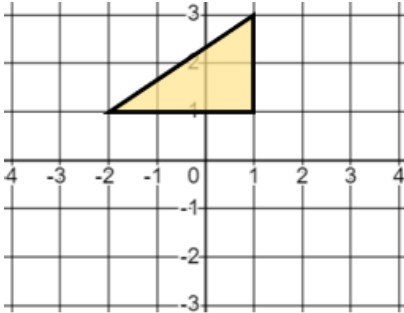
**(c)**

Enlarge the shape by scale factor 2 about the origin



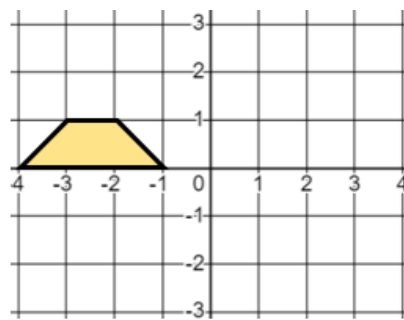
**(d)**

Rotate the shape by  $180^\circ$  about the point  $(1, 0)$



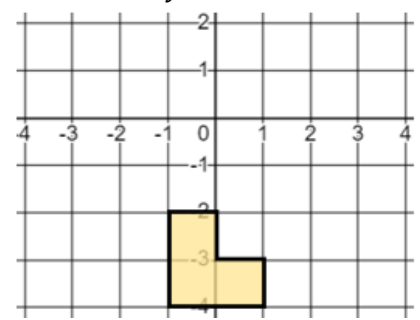
**(e)**

Translate the shape by  $\begin{pmatrix} 5 \\ -2 \end{pmatrix}$



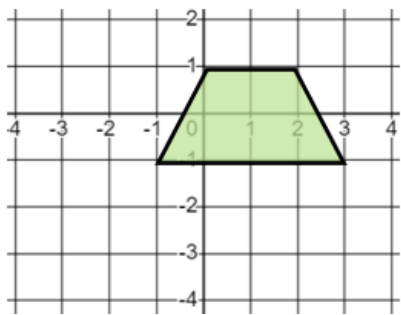
**(f)**

Reflect the shape in the line  $y = -1$



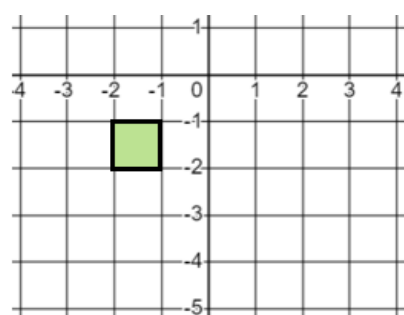
**(g)**

Translate the shape by  $\begin{pmatrix} -2 \\ -3 \end{pmatrix}$



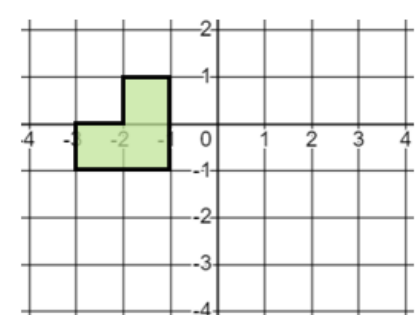
**(h)**

Enlarge the shape by scale factor 3 about  $(-3, -1)$



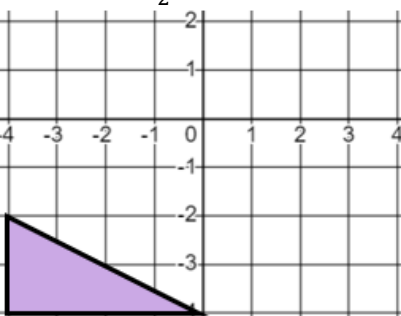
**(i)**

Rotate the shape  $90^\circ$  clockwise about  $(0, -2)$



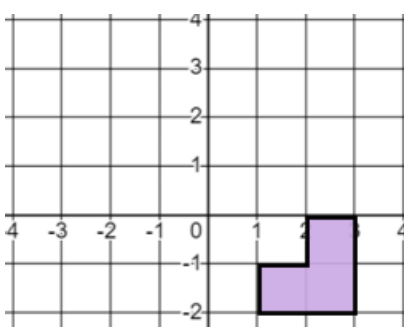
**(j)**

Enlarge the shape by scale factor  $\frac{1}{2}$  about  $(2, 2)$



**(k)**

Reflect the shape in the line  $y = x$



**(l)**

Rotate the shape  $90^\circ$  anti-clockwise about  $(-1, 0)$

