

a Reflect in $y = x$, then in $y = -x$. Describe this as one. <i>rotation 180° about $(0, 0)$</i> the two diagonals make a half turn	b Reflect in $y = x$, then rotate 180° about $(0, 0)$. Describe this as one. <i>reflection in $y = -x$</i> a diagonal reflection and a half turn	c Translate by $\begin{pmatrix} 2 \\ 0 \end{pmatrix}$, then reflect in $x = 0$. Describe this as one. <i>reflection in $x = -1$</i> a translation then a reflection as one	d Which has one invariant point: a reflection, a rotation or a translation? <i>a rotation</i> a rotation has one invariant point
e Rotate 90° clockwise about $(0, 0)$, then translate by $\begin{pmatrix} 2 \\ 0 \end{pmatrix}$. Describe this as one. <i>rotation 90° clockwise about $(1, -1)$</i> a turn then a move: a new centre	f Rotate 90° clockwise about $(0, 0)$, then about $(2, 0)$. Describe this as one. <i>rotation 180° about $(1, 1)$</i> two turns about different centres	g Rotate 180° about $(0, 0)$, then about $(2, 0)$. Describe this as one. <i>translation $\begin{pmatrix} 4 \\ 0 \end{pmatrix}$</i> two half turns make a translation	h Reflect in $x = a$, then in $x = b$. Describe this as one. <i>translation $\begin{pmatrix} 2b - 2a \\ 0 \end{pmatrix}$</i> parallel mirrors in general
i Reflect in the y axis, then in line L . This is a translation by $\begin{pmatrix} 6 \\ 0 \end{pmatrix}$. Find L . <i>$x = 3$</i> working back to the second mirror	j Reflect in the x axis, then translate by $\begin{pmatrix} 4 \\ 0 \end{pmatrix}$. How many points are invariant? <i>none</i> a glide has no invariant points	k Reflect in $y = 0$, then in L , to turn 90° clockwise about $(0, 0)$. Find L . <i>$y = -x$</i> working back to a diagonal mirror	l Reflect in $y = x$, then in $y = x + 2$. Describe this as one. <i>translation $\begin{pmatrix} -2 \\ 2 \end{pmatrix}$</i> parallel diagonal mirrors

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