Lines of Invariant Points

For each transformation matrix, find the equation of any lines of invariant points.

(a)	(b)	(c)	(d)
$\begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}$	$\begin{pmatrix} 0 & -1 \\ -1 & 0 \end{pmatrix}$	$\begin{pmatrix} 4 & -1 \\ 3 & 0 \end{pmatrix}$	$\begin{pmatrix} 3 & -1 \\ -2 & 2 \end{pmatrix}$
$y = x$	$y = -x$	$y = 3x$	$y = 2x$
(e)	**(f)**	**(g)**	**(h)**
$\begin{pmatrix} -4 & -1 \\ 5 & 2 \end{pmatrix}$	$\begin{pmatrix} 2 & -2 \\ -1 & 3 \end{pmatrix}$	$\begin{pmatrix} -1 & 3 \\ 4 & -5 \end{pmatrix}$	$\begin{pmatrix} 2 & -3 \\ 1 & 6 \end{pmatrix}$
$y = -5x$	$y = \frac{1}{2}x$	$y = \frac{2}{3}x$	No lines of invariant points
(i)	**(j)**	**(k)**	**(l)**
$\begin{pmatrix} 0 & \frac{1}{2} \\ 4 & -1 \end{pmatrix}$	$\begin{pmatrix} -\frac{3}{2} & 2 \\ 5 & -\frac{1}{2} \end{pmatrix}$	$\begin{pmatrix} 1-\sqrt{3} & 1 \\ \sqrt{3} & -1 \end{pmatrix}$	$\begin{pmatrix} 2a+1 & 2 \\ -4a & -3 \end{pmatrix}$
$y = 2x$	No lines of invariant points	$y = \sqrt{3}x$	$y = -ax$