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| **Lines of Invariant Points** |
| For each transformation matrix, find the equation of any lines of invariant points. |
| **(a)** | **(b)** | **(c)** | **(d)** |
| $$\left(\begin{matrix}0&1\\1&0\end{matrix}\right)$$ | $$\left(\begin{matrix}0&-1\\-1&0\end{matrix}\right)$$ | $$\left(\begin{matrix}4&-1\\3&0\end{matrix}\right)$$ | $$\left(\begin{matrix}3&-1\\-2&2\end{matrix}\right)$$ |
| **(e)** | **(f)** | **(g)** | **(h)** |
| $$\left(\begin{matrix}-4&-1\\5&2\end{matrix}\right)$$ | $$\left(\begin{matrix}2&-2\\-1&3\end{matrix}\right)$$ | $$\left(\begin{matrix}-1&3\\4&-5\end{matrix}\right)$$ | $$\left(\begin{matrix}2&-3\\1&6\end{matrix}\right)$$ |
| **(i)** | **(j)** | **(k)** | **(l)** |
| $$\left(\begin{matrix}0&\frac{1}{2}\\4&-1\end{matrix}\right)$$ | $$\left(\begin{matrix}-\frac{3}{2}&2\\5&-\frac{1}{2}\end{matrix}\right)$$ | $$\left(\begin{matrix}1-\sqrt{3}&1\\\sqrt{3}&-1\end{matrix}\right)$$ | $$\left(\begin{matrix}2a+1&2\\-4a&-3\end{matrix}\right)$$ |