(13)

$$\begin{bmatrix} 0 & a & 0 & 0 & 0 \\ b & 0 & c & 0 & 0 \\ 0 & d & 0 & e & 0 \\ 0 & 0 & f & 0 & g \\ 0 & 0 & 0 & h & 0 \end{bmatrix} \rightarrow \begin{bmatrix} 0 & d & 0 & 0 & 0 \\ b & 0 & c & 0 & 0 \\ 0 & d & 0 & e & 0 \\ 0 & 0 & f & 0 & g \\ 0 & 0 & 0 & e & 0 \end{bmatrix} \rightarrow \begin{bmatrix} 0 & d & 0 & 0 & 0 \\ b & 0 & c & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & f & 0 & g \\ 0 & 0 & 0 & e & 0 \end{bmatrix}$$

MULT ① by $\frac{d}{a}$

MULT ⑤ by $\frac{e}{h}$

ADD $-$① to ③

ADD $-$⑤ to ③

Note that ③ is a row of all zeroes. So we know that this is a matrix that can't be inverted. (We assume that in the solution above, $a \neq 0$ and $h \neq 0$. If either is zero, we have a row of zeroes to begin with.)