6.2 FOR $Ax_1 = e_1$ & $Ax_2 = e_2$ ...

... $x_1 = \begin{bmatrix} \frac{1}{a}\left(1 - \frac{1}{ad-bc}\right) \\ \frac{cb}{ad-bc} \end{bmatrix}$, $x_2 = \begin{bmatrix} -\frac{b}{ad-bc} \\ \frac{1}{d - \frac{cb}{a}} \end{bmatrix}$

IF DET(A) = 0 THEN $ad - bc = 0$,
AND A^{-1} CONTAINS TERMS DIVIDED BY
$ad-bc$, SO A^{-1} CANNOT EXIST
IF DET(A) = 0, ... FOR A^{-1} TO EXIST

DET(A) $\neq 0$