

$$\begin{aligned}
\begin{vmatrix} 1 & 3 & 0 & 5 \\ -2 & 0 & 4 & 0 \\ 1 & 2 & -1 & 3 \\ 1 & -2 & 1 & -1 \end{vmatrix} &= -2 \begin{vmatrix} 3 & 0 & 5 \\ 2 & -1 & 3 \\ -2 & 1 & -1 \end{vmatrix} + 4 \begin{vmatrix} 1 & 3 & 5 \\ 1 & 2 & 3 \\ 1 & -2 & -1 \end{vmatrix} & (1) \\
&= -2 \left( 3 \begin{vmatrix} -1 & 3 \\ 1 & -1 \end{vmatrix} + 5 \begin{vmatrix} 2 & -1 \\ -2 & 1 \end{vmatrix} \right) - 1 \left( 1 \begin{vmatrix} 2 & -2 \\ -2 & -1 \end{vmatrix} - 3 \begin{vmatrix} 1 & 3 \\ 1 & -1 \end{vmatrix} + 5 \begin{vmatrix} 1 & 2 \\ 1 & -2 \end{vmatrix} \right) & (2) \\
&= -2(3 \times -2 + 5 \times 0) - 1(1 \times -6 - 3 \times -4 + 5 \times -4) & (3) \\
&= -2(-6) - 1(-6 + 12 - 20) & (4) \\
&= 12 + 14 & (5) \\
&= 26 & (6) \\
&\neq 0 & (7) \\
&\Rightarrow \text{Vectors are linearly independent} & (8)
\end{aligned}$$