For $\lambda = 4 \rightarrow$ $\begin{bmatrix} 3 & -2 & -3 \\ 0 & 0 & -5 \\ 0 & 0 & -2 \end{bmatrix} \rightarrow \begin{bmatrix} 3 & -2 & -3 \\ 0 & 0 & 1 \\ 0 & 0 & -2 \end{bmatrix} \rightarrow \begin{bmatrix} 3 & -2 & -3 \\ 0 & 0 & 1 \\ 0 & 0 & 0 \end{bmatrix} \rightarrow \overset{V_1 \quad V_2 \quad V_3}{\begin{bmatrix} 1 & -2/3 & 0 \\ 0 & 0 & 1 \\ 0 & 0 & 0 \end{bmatrix}} \begin{bmatrix} V_1 \\ V_2 \\ V_3 \end{bmatrix}$

$V_1 - \tfrac{2}{3} V_2 = 0 \qquad\qquad \underset{assume}{\underline{V_2 = 1}} \qquad V_3 = 0$

$V_1 = \tfrac{2}{3} V_2$

$$E\lambda_4 = \text{span} \begin{bmatrix} 2/3 \\ 1 \\ 0 \end{bmatrix}$$

For $\lambda = 1 \rightarrow \begin{bmatrix} 0 & -2 & -3 \\ 0 & -3 & -5 \\ 0 & 0 & -5 \end{bmatrix} \rightarrow \begin{bmatrix} 0 & 1 & 3/2 \\ 0 & -3 & -5 \\ 0 & 0 & -5 \end{bmatrix} \rightarrow \begin{bmatrix} 0 & 1 & 3/2 \\ 0 & 0 & -2 \\ 0 & 0 & -5 \end{bmatrix} \rightarrow \begin{bmatrix} 0 & 1 & 3/2 \\ 0 & 0 & 1 \\ 0 & 0 & 1 \end{bmatrix} \rightarrow \overset{V_1 \quad V_2 \quad V_3}{\begin{bmatrix} 0 & 1 & 0 \\ 0 & 0 & 1 \\ 0 & 0 & 0 \end{bmatrix}} \begin{bmatrix} V_1 \\ V_2 \\ V_3 \end{bmatrix}$

$0 + V_2 + 0 = 0 \qquad\qquad V_3 = 0 \qquad \text{assume } V_1 = 1$

$V_2 = 0$

$$E\lambda_1 = \text{span} \begin{bmatrix} 1 \\ 0 \\ 0 \end{bmatrix}$$