Find the Rank and nullity of the matrix.

$$A = \begin{bmatrix} -1 & 2 & 0 & 4 & 5 & -3 \\ 3 & -7 & 2 & 0 & 1 & 4 \\ 2 & -5 & 2 & 4 & 6 & 1 \\ 4 & -9 & 2 & -4 & -4 & 7 \end{bmatrix}$$

To reduce Row - Echelon form.

$R_2 + 3R_1 \;,\; R_3 + 2R_1 \;,\; R_4 + 4R_1$

$$R\; \begin{bmatrix} -1 & 2 & 0 & 4 & 5 & -3 \\ 0 & -1 & 2 & 12 & 16 & -5 \\ 0 & -1 & 2 & 12 & 16 & -5 \\ 0 & -1 & 2 & 12 & 16 & -5 \end{bmatrix}$$

$-R_2$

$$R\; \begin{bmatrix} -1 & 2 & 0 & 4 & 5 & -3 \\ 0 & 1 & -2 & -12 & -16 & 5 \\ 0 & -1 & 2 & 12 & 16 & -5 \\ 0 & -1 & 2 & 12 & 16 & -5 \end{bmatrix}$$

$R_3 + R_2 \;,\; R_4 + R_2$

$$R\; \begin{bmatrix} 1 & 2 & 0 & 4 & 5 & -3 \\ 0 & 1 & -2 & -12 & -16 & 5 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$R_1 - 2R_2$