

$$A = \begin{bmatrix} 2 & 2 & 1 & 7 \\ -1 & 2 & 0 & 3 \\ 3 & 2 & 1 & 8 \\ 4 & 2 & 0 & 8 \end{bmatrix}$$

Pivot = 2

$$\begin{aligned} R_2' &= 2R_2 + R_1 \\ R_3' &= \frac{2}{3}R_3 - R_1 \\ R_4' &= \frac{1}{2}R_4 - R_1 \end{aligned} = \begin{bmatrix} 2 & 2 & 1 & 7 \\ 0 & 6 & 1 & 13 \\ 0 & -2/3 & -1/3 & -5/3 \\ 0 & -1 & -1 & -3 \end{bmatrix}$$

Pivot = 6

$$\begin{aligned} R_3'' &= 9R_3 + R_2 \\ R_4'' &= +6R_4 + R_2 \end{aligned} = \begin{bmatrix} 2 & 2 & 1 & 7 \\ 0 & 6 & 1 & 13 \\ 0 & 0 & -2 & -2 \\ 0 & 0 & -5 & -5 \end{bmatrix}$$

Pivot = -2

$$R_4''' = \frac{2}{5}R_4 - R_3 = \begin{bmatrix} 2 & 2 & 1 & 7 \\ 0 & 6 & 1 & 13 \\ 0 & 0 & -2 & -2 \\ 0 & 0 & 0 & 0 \end{bmatrix}$$

Pivot = 0

Pivot value can't be 0 & there is no row exchange  
 $\therefore$  Rank = 3.