

Step-1

We have

$$A = \begin{bmatrix} x & x & x \\ 0 & 0 & x \\ 0 & 0 & x \end{bmatrix}$$

$$A = \begin{bmatrix} a & b & c \\ 0 & 0 & d \\ 0 & 0 & e \end{bmatrix}$$

Where a, b, c, d, e are non “zero values marked in the place of x

Step-2

Then using row operation of $\text{row } 3 - (\text{Row } 2 \text{ multiplied by } e d^{-1})$ on A

We get a zero row so that

$$\det A = \begin{vmatrix} a & b & c \\ 0 & 0 & d \\ 0 & 0 & 0 \end{vmatrix}$$

= $\boxed{0}$ Since it contains a zero row

And clearly rank of $A = \boxed{2}$