

$$211 \quad \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 1 & 2 \end{bmatrix} \text{ is } \begin{cases} R_1 \rightarrow 1 & 0 & -20 & -40 \\ 20R_3 \rightarrow 0 & 0 & 20 & 40 \\ R_1 \rightarrow 1 & 0 & 0 & 0 \end{cases}$$

$$\begin{bmatrix} 1 & 0 & 0 & 2 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 1 & 2 \end{bmatrix} \begin{matrix} \rightarrow x \\ \rightarrow y \\ \rightarrow z \end{matrix}$$

for $x=0$ $y=1$ $z=2$

substitute x, y, z values in eq (2) then

4x + 2y - 2z = 0

$$4(0) + 2(1) - 2(2) = 0$$

$$0 + 2 - 2 = 0$$

$$2 - 2 = 0$$

$$\boxed{0 = 0}$$

$\therefore$ Hence, Gauss Jordan method has

proved.