

$$\begin{pmatrix} x_3 = x_5 \\ x_2 = 3x_4 + x_5 \\ x_1 = -2x_4 - 2x_5 \end{pmatrix}$$

$$\begin{bmatrix} x_1 \\ x_2 \\ x_3 \\ x_4 \\ x_5 \end{bmatrix} = x_4 \begin{bmatrix} -2 \\ 3 \\ + x_5 \end{bmatrix}$$

4.3.11 
$$x - 5y + 2z = 0 \Rightarrow (x = 5y - 2z)$$
  
 $y, z$  are free

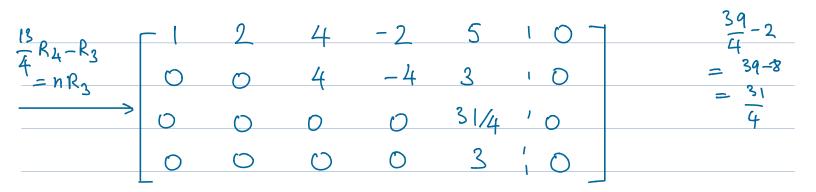
$$\vec{X} = \begin{bmatrix} x \\ y \\ z \end{bmatrix} = y \begin{bmatrix} 5 \\ 1 \end{bmatrix} + z \begin{bmatrix} -2 \\ 0 \end{bmatrix}$$

$$x - 5y + 4z = 0 \Rightarrow |z = 5y - 4z|$$

(y, & are free

$$\Rightarrow \vec{x} = \begin{bmatrix} x \\ y \end{bmatrix} = y \begin{bmatrix} 5 \\ 1 \end{bmatrix} + z \begin{bmatrix} -4 \\ 0 \end{bmatrix}$$

$$A = \begin{bmatrix} 1 & 2 & 4 & -2 & 5 \\ 1 & 2 & 0 & 2 & 5 \\ 2 & 4 & -5 & 9 & 8 \\ 4 & 8 & 0 & 8 & 8 \\ \end{bmatrix} \begin{bmatrix} 1 & 2 & 4 & -2 & 5 & 0 \\ 1 & 2 & 0 & 2 & 5 & 1 & 0 \\ 2 & 4 & -5 & 9 & 8 & 1 & 0 \\ 1 & 2 & 0 & 2 & 2 & 1 & 0 \end{bmatrix}$$



|     | [α, ]               |         | -2 -       |      | 2 - | 1    | 2 -               |  |
|-----|---------------------|---------|------------|------|-----|------|-------------------|--|
| ₹ = | ۱<br>۲ <sub>9</sub> | $=\chi$ |            | + 71 | 0   | + 2= | Ō                 |  |
|     | L,                  | 2       | 0          | 4    | 1   | 3    | - 3/ <sub>4</sub> |  |
|     | γ.                  |         | C)         |      | 1   |      |                   |  |
|     | 7 -                 |         | $\bigcirc$ |      | 0   |      | 0                 |  |
|     | _ ~5 _              |         |            |      |     |      |                   |  |

