



Remember there are 3 kinds of row operations

$$7R_2$$

$$R_3 - 3R_1$$

$$R_2 \leftrightarrow R_3$$

$$\begin{bmatrix} 1 & 5 & \dots\dots\dots \\ 0 & 3 & \dots\dots\dots \\ 0 & -2 & \dots\dots\dots \end{bmatrix}$$

$$\begin{bmatrix} 1 & -6 & \dots\dots\dots \\ 0 & 1 & \dots\dots\dots \\ 0 & 4 & \dots\dots\dots \end{bmatrix} \begin{array}{l} R_1 + 6R_2 \\ \longrightarrow \\ R_3 - 4R_2 \end{array}$$

$$\left[ \begin{array}{cccc} 1 & 0 & -5 & \dots\dots\dots \\ 0 & 1 & 4 & \dots\dots\dots \\ 0 & 0 & 1 & \dots\dots\dots \\ 0 & 0 & 2 & \dots\dots\dots \end{array} \right] \begin{array}{l} R_1 + 5R_3 \\ R_2 - 4R_3 \\ \longrightarrow \\ R_4 - 2R_3 \end{array}$$

$$\begin{bmatrix} 1 & 0 & 8 & \dots\dots\dots \\ 0 & 1 & 4 & \dots\dots\dots \\ 0 & 0 & 0 & \dots\dots\dots \\ 0 & 0 & -3 & \dots\dots\dots \end{bmatrix} \xrightarrow{R_3 \leftrightarrow R_4}$$