

$$\begin{array}{ccc|c}
 x_1 & x_2 & x_3 & b_i \\
 0 & 3 & 9 & 3 \\
 2 & 6 & 2 & 0 \\
 1 & 5 & 10 & 5
 \end{array}$$

$$x = \begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix}$$

$$b = \begin{bmatrix} b_1 \\ b_2 \\ b_3 \end{bmatrix} = \begin{bmatrix} 3 \\ 0 \\ 5 \end{bmatrix}$$

$$\begin{array}{ccc|l}
 & & & Ax \\
 & & & \\
 0 & 3 & 9 & 3x_1 + 9x_3 \\
 2 & 6 & 2 & 2x_1 + 6x_2 + 2x_3 \\
 1 & 5 & 10 & x_1 + 5x_2 + 10x_3
 \end{array}$$

←

$$Ax = b$$

$$R: 1$$

$$\begin{array}{ccc|c}
 & & & x_1 \\
 & & & x_2 \\
 & & & x_3 \\
 1 & 0 & 0 & x_1 \\
 0 & 1 & 0 & x_2 \\
 0 & 0 & 1 & x_3
 \end{array}$$

$$\begin{aligned}
 x_1 + x_3 &= 4 \\
 x_2 + x_3 &= 3 \\
 x_1 + x_2 &= 5
 \end{aligned}
 \quad \checkmark$$

$$A \left\{ \begin{array}{ccc|c} x_1 & x_2 & x_3 & b_i \\ 1 & 0 & 1 & 4 \\ 0 & 1 & 1 & 3 \\ (-1) \downarrow 1 & 1 & 0 & 5 \end{array} \right\} b$$

$$\begin{array}{ccc|c}
 1 & 0 & 1 & 4 \\
 0 & 1 & 1 & 3 \\
 (-1) \downarrow 0 & 1 & -1 & 1
 \end{array}$$

$$\begin{array}{ccc|c}
 1 & 0 & 1 & 4 \\
 (-1) \rightarrow 0 & 1 & 1 & 3 \\
 0 & 0 & -2 & -2 \\
 \hline
 (-1) \rightarrow 1 & 0 & 0 & 3 \\
 0 & 1 & 0 & 2 \\
 0 & 0 & 1 & 1
 \end{array}$$

$$-2x_3 = -2$$

$$x_1 = 3$$

$$x_2 = 2$$

$$x_3 = 1$$