

$$\begin{aligned}
& \left(\begin{array}{ccc|ccc} 5 & 3 & 8 & 1 & 0 & 0 \\ 8 & 5 & 8 & 0 & 1 & 0 \\ 3 & 4 & 5 & 0 & 0 & 1 \end{array} \right) & \xrightarrow{(0) = \frac{1}{5} \times (0)} & \left(\begin{array}{ccc|ccc} 1 & \frac{3}{5} & \frac{8}{5} & \frac{1}{5} & 0 & 0 \\ 8 & 5 & 8 & 0 & 1 & 0 \\ 3 & 4 & 5 & 0 & 0 & 1 \end{array} \right) \\
& & \xrightarrow{(1) = (1) - 8 \times (0)} & \left(\begin{array}{ccc|ccc} 1 & \frac{3}{5} & \frac{8}{5} & \frac{1}{5} & 0 & 0 \\ 0 & \frac{1}{5} & -\frac{24}{5} & -\frac{8}{5} & 1 & 0 \\ 3 & 4 & 5 & 0 & 0 & 1 \end{array} \right) \\
& & \xrightarrow{(2) = (2) - 3 \times (0)} & \left(\begin{array}{ccc|ccc} 1 & \frac{3}{5} & \frac{8}{5} & \frac{1}{5} & 0 & 0 \\ 0 & \frac{1}{5} & -\frac{24}{5} & -\frac{8}{5} & 1 & 0 \\ 0 & \frac{11}{5} & \frac{1}{5} & -\frac{3}{5} & 0 & 1 \end{array} \right) \\
& & \xrightarrow{(1) = 5 \times (1)} & \left(\begin{array}{ccc|ccc} 1 & \frac{3}{5} & \frac{8}{5} & \frac{1}{5} & 0 & 0 \\ 0 & 1 & -24 & -8 & 5 & 0 \\ 0 & \frac{11}{5} & \frac{1}{5} & -\frac{3}{5} & 0 & 1 \end{array} \right) \\
& & \xrightarrow{(2) = (2) - \frac{11}{5} \times (1)} & \left(\begin{array}{ccc|ccc} 1 & \frac{3}{5} & \frac{8}{5} & \frac{1}{5} & 0 & 0 \\ 0 & 1 & -24 & -8 & 5 & 0 \\ 0 & 0 & 53 & 17 & -11 & 1 \end{array} \right) \\
& & \xrightarrow{(2) = \frac{1}{53} \times (2)} & \left(\begin{array}{ccc|ccc} 1 & \frac{3}{5} & \frac{8}{5} & \frac{1}{5} & 0 & 0 \\ 0 & 1 & -24 & -8 & 5 & 0 \\ 0 & 0 & 1 & \frac{17}{53} & -\frac{11}{53} & \frac{1}{53} \end{array} \right) \\
& & \xrightarrow{(0) = (0) - \frac{3}{5} \times (1)} & \left(\begin{array}{ccc|ccc} 1 & 0 & 16 & 5 & -3 & 0 \\ 0 & 1 & -24 & -8 & 5 & 0 \\ 0 & 0 & 1 & \frac{17}{53} & -\frac{11}{53} & \frac{1}{53} \end{array} \right) \\
& & \xrightarrow{(0) = (0) - 16 \times (2)} & \left(\begin{array}{ccc|ccc} 1 & 0 & 0 & -\frac{7}{53} & \frac{17}{53} & -\frac{16}{53} \\ 0 & 1 & -24 & -8 & 5 & 0 \\ 0 & 0 & 1 & \frac{17}{53} & -\frac{11}{53} & \frac{1}{53} \end{array} \right) \\
& & \xrightarrow{(1) = (1) + 24 \times (2)} & \left(\begin{array}{ccc|ccc} 1 & 0 & 0 & -\frac{7}{53} & \frac{17}{53} & -\frac{16}{53} \\ 0 & 1 & 0 & -\frac{16}{53} & \frac{1}{53} & \frac{24}{53} \\ 0 & 0 & 1 & \frac{17}{53} & -\frac{11}{53} & \frac{1}{53} \end{array} \right) \\
& \left(\begin{array}{ccc} -\frac{7}{53} & \frac{17}{53} & -\frac{16}{53} \\ -\frac{16}{53} & \frac{1}{53} & \frac{24}{53} \\ \frac{17}{53} & -\frac{11}{53} & \frac{1}{53} \end{array} \right) \left(\begin{array}{ccc} 5 & 3 & 8 \\ 8 & 5 & 8 \\ 3 & 4 & 5 \end{array} \right) & = & \left(\begin{array}{ccc} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{array} \right)
\end{aligned}$$