Simultaneous Linear Algebraic Equations

$$
\begin{aligned}
a_{11} x_1 + a_{12} x_2 + \cdots + a_{1n} x_n &= b_1 \\
a_{21} x_1 + a_{22} x_2 + \cdots + a_{2n} x_n &= b_2 \\
&\vdots \\
a_{n1} x_1 + a_{12} x_2 + \cdots + a_{nn} x_n &= b_n
\end{aligned}
$$

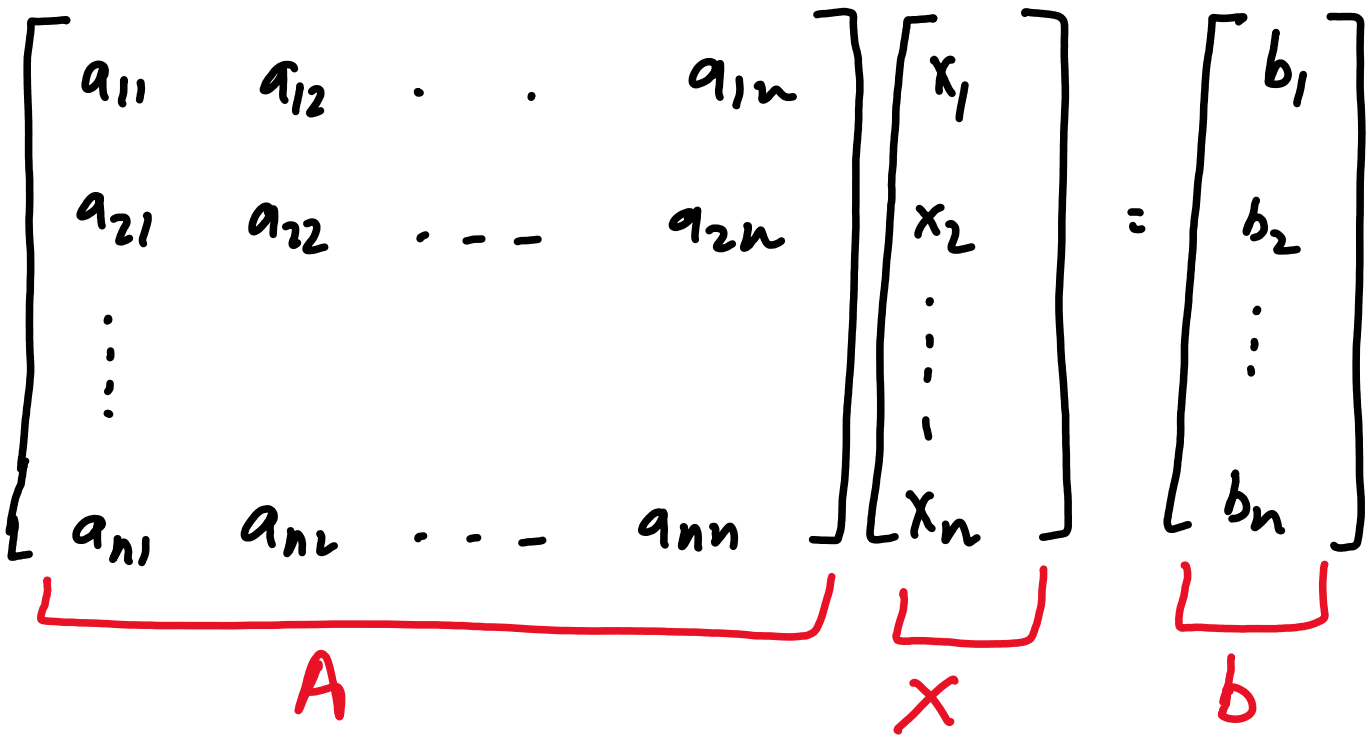
n equations

$x_1, x_2, \ldots x_n$ — n unknowns

a_{ij} $\quad 1 \le i,j \le n$ constants

b_i $\quad 1 \le i \le n$ constants

Matrix representation



$$Ax = b$$

$$x = A \backslash b$$

$$X = A^{-1}b$$

} 2 ways to solve for x.