

ECUACIONES MATRICIALES

1. $AX = B$

$$\underbrace{A^{-1} \cdot A}_I X = A^{-1} \cdot B$$

$$X = A^{-1} \cdot B$$

2. $XA - B = C$

$$XA = C + B$$

$$\underbrace{XA \cdot A^{-1}}_I = (C + B) \cdot A^{-1}$$

$$X = (C + B) \cdot A^{-1}$$

↑

3. $AX - B = CX$

$$AX - CX = B$$

$$(A - C) \cdot X = B$$

$$\underbrace{(A - C)^{-1} \cdot (A - C)}_I X = (A - C)^{-1} \cdot B$$

$$X = (A - C)^{-1} \cdot B$$

4. $AXB = C$

$$\underbrace{A^{-1} \cdot A}_I X B = A^{-1} \cdot C$$

$$X \underbrace{B \cdot B^{-1}}_I = A^{-1} \cdot C \cdot B^{-1}$$

$$X = A^{-1} \cdot C \cdot B^{-1}$$

↑ ↑

5. $AX - B = XC$

$$AX - XC = B$$

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6. $AX - B = 3X$

$$AX - 3IX = B$$

$$(A - 3I) \cdot X = B$$

$$\underbrace{(A - 3I)^{-1} \cdot (A - 3I)}_I X = (A - 3I)^{-1} \cdot B$$

$$X = (A - 3I)^{-1} \cdot B$$

$$\underbrace{\begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix}}_{2 \times 2} \underbrace{\begin{pmatrix} x & y \\ z & t \end{pmatrix}}_{2 \times 2} - \begin{pmatrix} 1 & -1 \\ 2 & 1 \end{pmatrix} = \begin{pmatrix} x & y \\ z & t \end{pmatrix} \begin{pmatrix} 2 & 1 \\ -1 & 1 \end{pmatrix}$$

$$\begin{pmatrix} x+2z & y+2t \\ 3x+4z & 3y+4t \end{pmatrix} - \begin{pmatrix} 1 & -1 \\ 2 & 1 \end{pmatrix} = \begin{pmatrix} 2x-y & x+y \\ 2z-t & z+t \end{pmatrix}$$

$$\begin{pmatrix} x+2z-1 & y+2t+1 \\ 3x+4z-2 & 3y+4t-1 \end{pmatrix} = \begin{pmatrix} 2x-y & x+y \\ 2z-t & z+t \end{pmatrix}$$

$$\begin{cases} x+2z-1 = 2x-y \\ y+2t+1 = x+y \\ 3x+4z-2 = 2z-t \\ 3y+4t-1 = z+t \end{cases}$$