

INVERSA UNEI MATRICE

$$A(0) = \begin{pmatrix} 1 & 2 & -1 \\ -2 & -3 & 0 \\ 2 & 4 & 0 \end{pmatrix}$$

$$A(0)^{-1} = \frac{1}{\det A(0)} \cdot A(0)^*$$

$$\det A(0) = \begin{vmatrix} 1 & 2 & -1 \\ -2 & -3 & 0 \\ 2 & 4 & 0 \end{vmatrix} = 2 \neq 0$$

$$A(0)^* = \begin{pmatrix} 1 & -2 & 2 \\ 2 & -3 & 4 \\ -1 & 0 & 0 \end{pmatrix}$$

$$A(0) = \begin{pmatrix} A_{11} & A_{12} & A_{13} \\ A_{21} & A_{22} & A_{23} \\ A_{31} & A_{32} & A_{33} \end{pmatrix} = \begin{pmatrix} 0 & -4 & -3 \\ 0 & 2 & 2 \\ -2 & 0 & 1 \end{pmatrix}$$

$$A_{11} = (-1)^{1+1} \cdot \begin{vmatrix} -3 & 4 \\ 0 & 0 \end{vmatrix} = 0$$

$$A_{23} = (-1)^{2+3} \cdot \begin{vmatrix} 1 & -2 \\ -1 & 0 \end{vmatrix} = -1 \cdot (-2) = +2$$

$$A_{12} = (-1)^{1+2} \cdot \begin{vmatrix} 2 & 4 \\ -1 & 0 \end{vmatrix} = -1 \cdot 4 = -4$$

$$A_{31} = (-1)^{3+1} \cdot \begin{vmatrix} -2 & 2 \\ -3 & 4 \end{vmatrix} = 1 \cdot (-2) = -2$$

$$A_{13} = (-1)^{1+3} \cdot \begin{vmatrix} 2 & -3 \\ -1 & 0 \end{vmatrix} = +1 \cdot (-3) = -3$$

$$A_{32} = (-1)^{3+2} \cdot \begin{vmatrix} 1 & 2 \\ 2 & 4 \end{vmatrix} = -1 \cdot 0 = 0$$

$$A_{21} = (-1)^{2+1} \cdot \begin{vmatrix} -2 & 2 \\ 0 & 0 \end{vmatrix} = 0$$

$$A_{33} = (-1)^{3+3} \cdot \begin{vmatrix} 1 & -2 \\ 2 & -3 \end{vmatrix} = 1 \cdot 1 = 1$$

$$A_{22} = (-1)^{2+2} \cdot \begin{vmatrix} 1 & 2 \\ -1 & 0 \end{vmatrix} = 1 \cdot 2 = 2$$

$$A(0)^{-1} = \frac{1}{\det A(0)} \cdot A(0)^* = \frac{1}{2} \cdot \begin{pmatrix} 0 & -4 & -3 \\ 0 & 2 & 2 \\ -2 & 0 & 1 \end{pmatrix} = \begin{pmatrix} 0 & -2 & -\frac{3}{2} \\ 0 & 1 & 1 \\ -1 & 0 & \frac{1}{2} \end{pmatrix}$$