

gegeben

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$$\begin{aligned} 1 \cdot 1 \cdot 2 &= 2 \\ 3 \cdot 1 \cdot (-3) &= -9 \\ (-2) \cdot 3 \cdot (-4) &= 24 \end{aligned}$$

$$\underline{B} = \begin{pmatrix} 1 & 3 & -2 \\ 3 & 1 & 1 \\ -3 & -4 & 2 \end{pmatrix}$$

$$\begin{aligned} 3 \cdot 3 \cdot 2 &= 18 \\ 1 \cdot 1 \cdot (-4) &= -4 \\ (-2) \cdot 1 \cdot (-3) &= 6 \end{aligned}$$

$$\det \underline{B} = 2 + (-9) + 24 - (18 + (-4) + 6) = -3 \neq 0 \checkmark$$

1)

$$\underline{B} = \begin{pmatrix} 1 & 3 & -2 \\ 3 & 1 & 1 \\ -3 & -4 & 2 \end{pmatrix} \rightarrow \underline{C}_{1,1} = \begin{pmatrix} 1 & 1 \\ -4 & 2 \end{pmatrix}$$

$$\underline{C}_{1,1} = (-1)^{(1+1)} \cdot \begin{pmatrix} 1 & 1 \\ -4 & 2 \end{pmatrix} = 1 \cdot (2 \cdot 1 - (-1) \cdot 4) = 6$$

$$\underline{B} = \begin{pmatrix} 1 & 3 & -2 \\ 3 & 1 & 1 \\ -3 & -4 & 2 \end{pmatrix} \rightarrow \underline{C}_{1,2} = \begin{pmatrix} 3 & 1 \\ -3 & 2 \end{pmatrix}$$

$$\underline{C}_{1,2} = (-1)^{(1+2)} \cdot \begin{pmatrix} 3 & 1 \\ -3 & 2 \end{pmatrix} = -1 \cdot (3 \cdot 2 - (-1) \cdot 3) = -9$$

$$\underline{B} = \begin{pmatrix} 1 & 3 & -2 \\ 3 & 1 & 1 \\ -3 & -4 & 2 \end{pmatrix} \rightarrow \underline{C}_{1,3} = \begin{pmatrix} 3 & 1 \\ -3 & -4 \end{pmatrix}$$

$$\underline{C}_{1,3} = (-1)^{(1+3)} \cdot \begin{pmatrix} 3 & 1 \\ -3 & -4 \end{pmatrix} = 1 \cdot (3 \cdot (-4) - 1 \cdot (-3)) = -9$$

$$\underline{B} = \begin{pmatrix} 1 & 3 & -2 \\ 3 & 1 & 1 \\ -3 & -4 & 2 \end{pmatrix} \rightarrow \underline{C}_{2,1} = \begin{pmatrix} 3 & -2 \\ -4 & 2 \end{pmatrix}$$

$$\underline{C}_{2,1} = (-1)^{(2+1)} \cdot \begin{pmatrix} 3 & -2 \\ -4 & 2 \end{pmatrix} = -1 \cdot (3 \cdot 2 - (-2) \cdot (-4)) = 2$$

$$\underline{B} = \begin{pmatrix} 1 & 3 & -2 \\ 3 & 1 & 1 \\ -3 & -4 & 2 \end{pmatrix} \rightarrow \underline{C}_{2,2} = \begin{pmatrix} 1 & -2 \\ -3 & 2 \end{pmatrix}$$

$$\underline{C}_{2,2} = (-1)^{(2+2)} \cdot \begin{pmatrix} 1 & -2 \\ -3 & 2 \end{pmatrix} = 1 \cdot (1 \cdot 2 - (-2) \cdot (-3)) = -4$$

$$\underline{B} = \begin{pmatrix} 1 & 3 & -2 \\ 3 & 1 & 1 \\ -3 & -4 & 2 \end{pmatrix} \rightarrow \underline{C}_{2,3} = \begin{pmatrix} 1 & 3 \\ -3 & -4 \end{pmatrix}$$

$$\underline{C}_{2,3} = (-1)^{(2+3)} \cdot \begin{pmatrix} 1 & 3 \\ -3 & -4 \end{pmatrix} = -1 \cdot (1 \cdot (-4) - 3 \cdot (-3)) = -5$$

$$\underline{B} = \begin{pmatrix} 1 & 3 & -2 \\ 3 & 1 & 1 \\ -3 & -4 & 2 \end{pmatrix} \rightarrow \underline{C}_{3,1} = \begin{pmatrix} 3 & -2 \\ 1 & 1 \end{pmatrix}$$

$$\underline{C}_{3,1} = (-1)^{(3+1)} \cdot \begin{pmatrix} 3 & -2 \\ 1 & 1 \end{pmatrix} = 1 \cdot (3 \cdot 1 - (-2) \cdot 1) = 5$$

$$\underline{B} = \begin{pmatrix} 1 & 3 & -2 \\ 3 & 1 & 1 \\ -3 & -4 & 2 \end{pmatrix} \rightarrow \underline{C}_{3,2} = \begin{pmatrix} 1 & -2 \\ 3 & 1 \end{pmatrix}$$

$$\underline{C}_{3,2} = (-1)^{(3+2)} \cdot \begin{pmatrix} 1 & -2 \\ 3 & 1 \end{pmatrix} = -1 \cdot (1 \cdot 1 - (-2) \cdot 3) = -7$$

$$\underline{B} = \begin{pmatrix} 1 & 3 & -2 \\ 3 & 1 & 1 \\ -3 & -4 & 2 \end{pmatrix} \rightarrow \underline{C}_{3,3} = \begin{pmatrix} 1 & 3 \\ 3 & 1 \end{pmatrix}$$

$$\underline{C}_{3,3} = (-1)^{(3+3)} \cdot \begin{pmatrix} 1 & 3 \\ 3 & 1 \end{pmatrix} = 1 \cdot (1 \cdot 1 - 3 \cdot 3) = -8$$

$$\underline{B}^{(-1)} = \frac{1}{\det \underline{B}} \cdot \begin{pmatrix} C_{11} & C_{21} & C_{31} \\ C_{12} & C_{22} & C_{32} \\ C_{13} & C_{23} & C_{33} \end{pmatrix}$$

$$\underline{B}^{(-1)} = \frac{1}{-3} \cdot \begin{pmatrix} 6 & 2 & 5 \\ -9 & -4 & -7 \\ -9 & -5 & -8 \end{pmatrix} = \begin{pmatrix} -2 & -\frac{2}{3} & -\frac{5}{3} \\ 3 & \frac{4}{3} & \frac{7}{3} \\ 3 & \frac{5}{3} & \frac{8}{3} \end{pmatrix}$$