

$$|A| = a_{31} A_{31} + a_{32} A_{32} + a_{33} A_{33}$$

$$|A| = 2 A_{31} + 1 A_{32} + 1 A_{33}$$

$$|A| = 2 \cdot (-1) + 1 \cdot 0 + 1 \cdot 1 =$$

$$\underline{\underline{-2 + 0 + 1 = -1}}$$

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

$$\begin{vmatrix} 1 & 1 \\ 2 & 1 \end{vmatrix} = 1 \cdot (-1) = -1$$

$$A_{32} = (-1)^{3+2} \cdot M_{32} = (-1)^5 \cdot \begin{vmatrix} 1 & 1 \\ 1 & 1 \end{vmatrix} = 1 \cdot [1 - 1]$$

$$\begin{vmatrix} 1 & 1 \\ 1 & 1 \end{vmatrix} = 1 \cdot 0 = 0$$

$$A_{33} = (-1)^{3+3} \cdot M_{33} = (-1)^6 \cdot \begin{vmatrix} 1 & 1 \\ 1 & 2 \end{vmatrix} = 1 \cdot [2 - 1]$$

$$\begin{vmatrix} 1 & 1 \\ 1 & 2 \end{vmatrix} = 1 \cdot 1 = 1$$