AP SOLUTION

(HW #9)

(AP)

$$\begin{vmatrix} U + KV \\ a_2 \\ a_3 \\ \vdots \\ a_N \end{vmatrix} = \begin{vmatrix} U_1 + KV_1 & \cdots & U_N + KV_N \\ A_{21} & \cdots & A_{2N} \\ \vdots & & \\ A_{N1} & \cdots & A_{NN} \end{vmatrix}$$

$$= \sum_{j=1}^{N} (-1)^{1+j} (U_j + KV_j) \tilde{A}_{1j}$$

$$= \sum_{j=1}^{N} (-1)^{1+j} U_j \tilde{A}_{1j} + K \sum_{j=1}^{N} (-1)^{1+j} V_j \tilde{A}_{1j}$$

$$= \begin{vmatrix} U_1 & \cdots & U_N \\ A_{21} & & A_{2N} \\ A_{N1} & & A_{NN} \end{vmatrix} + K \begin{vmatrix} V_1 & \cdots & V_N \\ A_{21} & & A_{2N} \\ A_{N1} & & A_{NN} \end{vmatrix}$$

$$= \begin{vmatrix} U \\ a_2 \\ a_N \end{vmatrix} + K \begin{vmatrix} V \\ a_2 \\ a_N \end{vmatrix}$$

✓