Solution (#815) We saw in Example 3.150 that

$$\begin{vmatrix} 1 & -3 & 2 \\ 0 & 7 & 1 \\ -5 & 1 & 3 \end{vmatrix} = 105.$$

$$\begin{aligned} a_{21}C_{21} + a_{22}C_{22} + a_{23}C_{23} &= 0 \times 11 + 7 \times 13 + 1 \times 16 = 91 + 14 = 105. \\ a_{12}C_{12} + a_{22}C_{22} + a_{32}C_{32} &= -3 \times -5 + 7 \times 13 + 1 \times -1 = 15 + 91 - 1 = 105. \\ a_{13}C_{13} + a_{23}C_{23} + a_{33}C_{33}, &= 2 \times 35 + 1 \times 14 + 3 \times 7 = 70 + 14 + 21 = 105. \end{aligned}$$