8.7

1)
$$\begin{vmatrix} 2 & 1 & -5 & 1 \\ 1 & -3 & 0 & -6 \\ 0 & 2 & -1 & 2 \\ 1 & 4 & -7 & 6 \end{vmatrix} \overset{\substack{L_1 \to L_1 - 2L_2 \\ L_4 \to L_4 - L_2 \\ =}}{} \begin{vmatrix} 0 & 7 & -5 & 13 \\ 1 & -3 & 0 & -6 \\ 0 & 2 & -1 & 2 \\ 0 & 7 & -7 & 12 \end{vmatrix}$$

$$= -1 \begin{vmatrix} 7 & -5 & 13 \\ 2 & -1 & 2 \\ 7 & -7 & 12 \end{vmatrix} \overset{\substack{C_1 \to C_1 + 2C_2 \\ C_3 \to C_3 + 2C_2 \\ =}}{} -1 \begin{vmatrix} -3 & -5 & 3 \\ 0 & -1 & 0 \\ -7 & -7 & -2 \end{vmatrix}$$

$$(-1)(-1) \begin{vmatrix} -3 & 3 \\ -7 & -2 \end{vmatrix} = -3 \begin{vmatrix} -1 & 1 \\ 7 & 2 \end{vmatrix} = -3\big((-1)\cdot 2 - 7 \cdot 1\big) = 27$$

2)
$$\begin{vmatrix} 2 & 1 & -1 & 1 \\ 1 & 2 & 2 & -3 \\ 3 & -1 & -1 & 2 \\ 2 & 3 & 1 & 4 \end{vmatrix} \overset{\substack{C_1 \to C_1 - 2C_2 \\ C_3 \to C_3 + C_2 \\ C_4 \to C_4 - C_2 \\ =}}{} \begin{vmatrix} 0 & 1 & 0 & 0 \\ -3 & 2 & 4 & -5 \\ 5 & -1 & -2 & 3 \\ -4 & 3 & 4 & 1 \end{vmatrix}$$

$$-1 \begin{vmatrix} -3 & 4 & -5 \\ 5 & -2 & 3 \\ -4 & 4 & 1 \end{vmatrix} \overset{\substack{C_1 \to C_1 + 4C_3 \\ C_2 \to C_2 - 4C_3 \\ =}}{} -1 \begin{vmatrix} -23 & 24 & -5 \\ 17 & -14 & 3 \\ 0 & 0 & 1 \end{vmatrix}$$

$$= -1 \begin{vmatrix} -23 & 24 \\ 17 & -14 \end{vmatrix} = -2 \begin{vmatrix} -23 & 12 \\ 17 & -7 \end{vmatrix} = -2\big((-23)\cdot(-7) - 17\cdot 12\big) = 86$$