[mex192] Poisson brackets of angular momentum variables

Given the fundamental Poisson brackets $\{x_i, x_j\} = 0,\ \{p_i, p_j\} = 0,\ \{x_i, p_j\} = \delta_{ij}$, for the Cartesian position and momentum coordinates, determine the Poisson brackets $\{L_i, x_j\},\ \{L_i, p_j\}, \{L_i, L_j\}$ for the angular momentum variables

$$L_i \doteq \sum_{m,n=1}^{3} \epsilon_{imn} x_m p_n, \quad i = 1, 2, 3.$$

Solution: