$$J(X)=\begin{pmatrix}\frac{\partial f_1(X)}{\partial x_1} & \frac{\partial f_1(X)}{\partial x_2} & \cdots & \frac{\partial f_1(X)}{\partial x_6}\\ \frac{\partial f_2(X)}{\partial x_1} & \frac{\partial f_2(X)}{\partial x_2} & \cdots & \frac{\partial f_2(X)}{\partial x_6}\\ \cdots & \cdots & \cdots & \cdots\\ \frac{\partial f_6(X)}{\partial x_1} & \frac{\partial f_6(X)}{\partial x_2} & \cdots & \frac{\partial f_6(X)}{\partial x_6}\end{pmatrix}=\begin{pmatrix}0 & 0 & 0 & 2 & 2 & 2\\ 4x_1x_4 & 4x_2x_5 & 4x_3x_6 & 2x_1^2 & 2x_2^2 & 2x_3^2\\ 8x_1^3x_4 & 8x_2^3x_5 & 8x_3^3x_6 & 2x_1^4 & 2x_2^4 & 2x_3^4\\ 12x_1^5x_4 & 12x_2^5x_5 & 12x_3^5x_6 & 2x_1^6 & 2x_2^6 & 2x_3^6\\ 16x_1^7x_4 & 16x_2^7x_5 & 16x_3^7x_6 & 2x_1^8 & 2x_2^8 & 2x_3^8\\ 20x_1^9x_4 & 20x_2^9x_5 & 20x_3^9x_6 & 2x_1^{10} & 2x_2^{10} & 2x_3^{10}\end{pmatrix}$$

记$\alpha_1,\alpha_2,\alpha_3$为$x_4,x_5,x_6$，统一变量名称