克莱姆法则
Cramer's Rule

对于如下四元一次方程组：

$$\begin{cases} a_1x_1+b_1x_2+c_1x_3+d_1x_4 &= e_1 \\ a_2x_1+b_2x_2+c_2x_3+d_2x_4 &= e_2 \\ a_3x_1+b_3x_2+c_3x_3+d_3x_4 &= e_3 \\ a_4x_1+b_4x_2+c_4x_3+d_4x_4 &= e_4 \end{cases}$$

设如下行列式：

$$D = \begin{vmatrix} a_1 & b_1 & c_1 & d_1 \\ a_2 & b_2 & c_2 & d_2 \\ a_3 & b_3 & c_3 & d_3 \\ a_4 & b_4 & c_4 & d_4 \end{vmatrix}$$

$$D_1 = \begin{vmatrix} e_1 & b_1 & c_1 & d_1 \\ e_2 & b_2 & c_2 & d_2 \\ e_3 & b_3 & c_3 & d_3 \\ e_4 & b_4 & c_4 & d_4 \end{vmatrix}$$

$$D_2 = \begin{vmatrix} a_1 & e_1 & c_1 & d_1 \\ a_2 & e_2 & c_2 & d_2 \\ a_3 & e_3 & c_3 & d_3 \\ a_4 & e_4 & c_4 & d_4 \end{vmatrix}$$

$$D_3 = \begin{vmatrix} a_1 & b_1 & e_1 & d_1 \\ a_2 & b_2 & e_2 & d_2 \\ a_3 & b_3 & e_3 & d_3 \\ a_4 & b_4 & e_4 & d_4 \end{vmatrix}$$

$$D_4 = \begin{vmatrix} a_1 & b_1 & c_1 & e_1 \\ a_2 & b_2 & c_2 & e_2 \\ a_3 & b_3 & c_3 & e_3 \\ a_4 & b_4 & c_4 & e_4 \end{vmatrix}$$

则原四元一次方程组的解为：

$$\begin{cases} x_1 = \dfrac{D_1}{D} \\ x_2 = \dfrac{D_2}{D} \\ x_3 = \dfrac{D_3}{D} \\ x_4 = \dfrac{D_4}{D} \end{cases}$$