$$G(X_0,X_1,X_2,X_3) = (X_0,X_1,X_2,X_3)\begin{pmatrix} q'_{00} & q'_{01} & q'_{02} & q'_{03} \\ q'_{10} & q'_{11} & q'_{12} & q'_{13} \\ q'_{20} & q'_{21} & q'_{22}+\lambda, & q'_{23} \\ q'_{30} & q'_{31} & q'_{32} & q'_{33}+\lambda \end{pmatrix}\begin{pmatrix} X_0 \\ X_1 \\ X_2 \\ X_3 \end{pmatrix} = 0$$

$$\cap \left\{ \frac{\partial F}{\partial X_0} = 0 \quad \frac{\partial F}{\partial X_1} = 0, \quad \frac{\partial F}{\partial X} = 2X_2 = 0 \quad \frac{\partial F}{\partial X_3} = 2X_3 = 0 \right\}$$

$$(= \{ [\quad X_0, X_1, 0.0] \})$$

$=$ $G(X_0, X_1, 0, 0)$ is singular quadric in $\mathbb{P}^1$

i.e G is tangent to the singular line $\{[X_0, X_1, 0, 0]\}$ of F.

$\Rightarrow$ Thus the tangent cone of W_1 at a point $F \in W_2$ is the set of all quadrics tangent to the singular line of F $(= \{[X_0, X_1, 0, 0]\})$, for given any quadric $\hat{H}$ tangent to $\{[*, *, 0, 0]\}$,

then $\begin{vmatrix} h_{00} & h_{01} \\ h_{10} & h_{11} \end{vmatrix} = 0$. Consider the pencil

$$L = \{ \lambda Q + H \} \subset T_F(W_1).$$ ⌟

To find the degree of W_2, we proceed as in 4 above: W_2 is the image in W of $\mathbb{P}^{3*} \times \mathbb{P}^{3*}$ by the map f sending a pair (H_1, H_2) of hyperplanes in $\mathbb{P}^{3*}$ to the quadric $H_1 + H_2$.

⌜ $f : \mathbb{P}^{3*} \times \mathbb{P}^{3*} \longrightarrow$ ~~$\mathbb{P}^{3*}$~~ W is defined by $(H_1, H_2) \mapsto$