$\frac{\partial F}{\partial X_0} = 2a_0 X_0 + a_1 X_1 = 0$ at $p' = [(0, 1, 0 .. 0)]$

$\Rightarrow \qquad a_1 = 0$

$\frac{\partial F}{\partial X_1} = 0 = a_2 X_1 + a_1 X_0 = 0$ at $p' = [(0, 1, 0 .. 0)]$

$\Rightarrow \quad a_2 = 0.$

Thus $\quad F|_L = a_0 X_0^2$

$\Rightarrow$ F meets L twice. 중복되고 있음. 세번에

$\Rightarrow$ L meets F three times. Since F is quadric. F contains L. $\Rightarrow$ $q \in F$ $\Rightarrow$ $q \in F \cap V_{k-1} = \tilde{F}$.

$\Rightarrow$ L is a line meeting Λ and $\tilde{F}$.

Since $\tilde{F}$ is smooth in $V_{k-1} = \mathbb{P}^{k-1}$, $\tilde{F}$ has maximal rank $k-1+1$ $(= k)$. Thus we proved

F is the cone through Λ over $\tilde{F}$. $\lrcorner$

Note, incidentally, that since F contains all lines joining any point $p \in F$ to Λ, the tangent plane to F at any point contains Λ.

pf By the proof above, we can show thet any line joining any point $p \in F$ to Λ is contained in F. Clearly the tangent plane to F at any point contains Λ. $\lrcorner$

Thus, any plane in $\mathbb{P}^n$ disjoint from Λ intersects F smoothly.