at y, a contradiction.

「 $y \in L \subset F \cap G \Rightarrow$ Since $Q_y = Q'_y$, $T_y G = T_y F$. 」

Now that we have described Σ as the smooth intersection of three quadrics in $\mathbb{P}^5$, the reader will recognize Σ as a K-3 surface (Section 5, Chapter 4); in particular, Σ has numerical invariants

$$K_\Sigma \equiv 0, \quad q(\Sigma) = 0, \quad P_g(\Sigma) = 1, \quad c_1^2(\Sigma) = 0, \quad c_2(\Sigma) = 24.$$

「 See P592 for the proof that Σ is a K-3 surface. See P583, P590, & P593 for $c_2(\Sigma) = 24$. By the definition of K-3 surface on P590, $K_\Sigma \equiv 0$ and $q(\Sigma) = 0$.
$P_g(\Sigma) = h^{2,0}(\Sigma) = 1$ since $H^{2,0}(\Sigma) = H^0(\Sigma, \Omega^2)$
$= H^0(\Sigma, \mathcal{O}(\Lambda^2 T'^*\Sigma)) = H^0(\Sigma, \mathcal{O}(K_\Sigma)) = H^0(\Sigma, \mathcal{O}) \cong \mathbb{C}$.
By the result on P414, $c_1(\Lambda^2 T'^*\Sigma) = c_1(T'^*\Sigma) = -c_1(T'\Sigma) = -c_1(\Sigma) = 0$ since $\Lambda^2 T'^*\Sigma = \Sigma \times \mathbb{C}$. 」

In as much as Σ is minimal and smooth, moreover, the map

$$\Sigma \xrightarrow{\pi} S$$

is the minimal desingularization of S; and the inverse images $\pi^{-1}(p) = X_p$ of the singular points $p \in S$