decomposition of S.

Since, in the course of passing from Σ to S, we lose all the simplices in $\bigcup X_p$ and gain one new vertex for each p, we have

$$\chi(S) = \chi(\Sigma) - \sum_{p \in R} (\chi(X_p) - 1)$$
$$= \chi(\Sigma) - 16 = 8.$$

$\ulcorner$ $\chi(S) = \chi(\Sigma) - \sum_{p \in R} \chi(X_p) + \# R$ since

each X_p is disjoint from $X_{p'}$ if $p \neq p'$.
$\chi(X_p) = \chi(\mathbb{P}^1) = 2$ $\quad \# R = 16$. $\Rightarrow \sum_{p \in R} \chi(X_p)$

$= 32 \quad \Rightarrow \chi(S) = \chi(\Sigma) - 16 \underset{\substack{\uparrow \\ \text{see } p}}{=} 24 - 16 = 8$ $\lrcorner$

Two Configurations

There are two classical configurations associated to the Kummer surface $S \subset \mathbb{P}^3$ and its desingularization $\Sigma \subset \mathbb{P}^5$. The first has to do with the 16 double points of S and may be