Now, the product

$$\tilde{V}_c^{\,5} = 32\,(\tilde{I}_p + \tilde{I}_\ell)^5$$
$$= 32\,(\tilde{I}_p^5 + 5\,\tilde{I}_p^4\,\tilde{I}_\ell + 10\,\tilde{I}_p^3\,\tilde{I}_\ell^2 + 10\,\tilde{I}_p^2\,\tilde{I}_\ell^3 + 5\,\tilde{I}_p\,\tilde{I}_\ell^4 + \tilde{I}_\ell^5)$$

can be evaluated by elementary geometry: since there is a unique conic in the plane through five generically chosen points,

$$\tilde{I}_p^5 = 1.$$

Γ $\tilde{I}_p^5 = \tilde{I}_{p_1} \cap \tilde{I}_{p_2} \cap \tilde{I}_{p_3} \cap \tilde{I}_{p_4} \cap \tilde{I}_{p_5} = \{$ conics through $p_1, \cdots \& p_5 \}$

$\Rightarrow$ Since $H^0(\mathbb{P}^2, \mathcal{O}(2H)) = \langle \sigma_0, \sigma_1, \cdots \sigma_5 \rangle$,

$$a_0 \sigma_0 + \cdots + a_5 \sigma_5 = \sigma.$$

$$\sigma(p_1) = a_0\,\sigma_0(p_1) + \cdots + a_5\,\sigma_5(p_1)$$
$$\vdots$$
$$\sigma(p_5) = a_0\,\sigma_0(p_5) + \cdots + a_5\,\sigma_5(p_5)$$

$\Rightarrow$ For generic $p_1, \cdots p_5$, $\dim \{\sigma\} = 1$.

For, for a generic 3-plane $\mathbb{P}^3$ in $\mathbb{P}^5$, $i(\mathbb{P}^2) \cap \mathbb{P}^3$ is