Exercises

(1) Show that for general $\phi_0, \ldots, \phi_{n+1} \in H^0\left(\mathbb{P}^{n+1}, \mathcal{O}(p)\right)$ they induce a regular morphism

$$f : \mathbb{P}^{n+1} \longrightarrow \mathbb{P}^{n+1}$$

(2) Show that $f : \mathbb{P}^{n+1} \to \mathbb{P}^{n+1}$ has degree p^{n+1}

(3) Let $\mathbb{P}(V) \xrightarrow{\pi} X$ be a projective bdl. Show that if $\alpha \in H^{2i}(X, \mathbb{Z})$ is not algebraic, then $[H]^j \cup \pi^* \alpha$ cannot be algebraic.