Exercises

Use the decomposition of the Δ to prove the following:

(1) Let $Y \subseteq X$ be of codim r. Suppose that $CH_0(X)$ is supported on Y. Then $H^i_{nr}(X, A)$ is torsion for $i > r$.

(2) Let $Y \subseteq X$ be of codim r. Suppose $CH_0(X)$ is supported on Y. Then $H^i(X, \mathcal{H}^{\dim(X)}(A))$ is torsion for $i < r$

(3) $$H^p(\mathbb{P}^n, \mathcal{H}^q(A)) = \begin{cases} 0 & p \neq q \text{ or } p > n \\ A & p = q \text{ and } p \leq n \end{cases}$$