Étale cohomology reading seminar

Exercise sheet 9

Exercise 1. Milne, exercise V.2.20 – the Lefschetz fixed point theorem with finite coefficients.

Exercise 2. Let $f : X \to Y$ be a continuous function between topological spaces which is closed, and let $y \in Y$. Show that for a sheaf $\mathcal{F}$ on X,

$$\varinjlim_{y \in V \subseteq Y} \mathcal{F}(f^{-1}(V)) \cong \varinjlim_{X_y \subseteq U \subseteq X} \mathcal{F}(U).$$

Exercise 3. For any $n \geq 1$ find a surjective morphism $(\mathbb{P}^1)^n \to \mathbb{P}^n$ (hint: consider elementary symmetric polynomials.)