

PROBLEM SET 5 (DUE ON OCT 20)

(All Exercises are references to the December 29, 2015 version of *Foundations of Algebraic Geometry* by R. Vakil.)

- Problem 1.** Exercise 6.2.C (morphisms of ringed spaces induce maps of stalks)
- Problem 2.** Exercise 6.3.M (morphisms from Spec of a local ring)
- Problem 3.** Exercise 6.3.N (some morphisms to \mathbb{P}^n)
- Problem 4.** Describe all morphisms of k -schemes $\pi : \mathbb{P}_k^1 \rightarrow \mathbb{P}_k^1$. (Hint: if π maps the generic point to the generic point, consider the induced map of stalks there.)