

Algebraic Geometry 2

Exercises 8

Dr. Tom Bachmann

Summer Semester 2021

Exercise 1. Let K/k be a finite type field extension of transcendence degree 1 with abstract regular curve X_K constructed in the lecture (i.e. the closed points of X_K are in bijection with DVRs of K containing k). Show using the valuative criterion that X_K is proper over k .

Exercise 2. Show that the category with objects the curves over the field k and morphisms the rational dominant morphisms is equivalent to the category of finite type field extensions of k of transcendence degree 1.