

## PROBLEM SET 8 (DUE ON TUESDAY, NOV 27)

(All Exercises are references to the November 18, 2017 version of *Foundations of Algebraic Geometry* by R. Vakil.)

**Problem 1.** Exercise 10.1.M (sections of morphisms)

**Problem 2.** Exercise 10.2.E (graphs of rational maps)

**Problem 3.** Show that every rational map  $\pi : \mathbb{P}_{\mathbb{C}}^1 \dashrightarrow \mathbb{P}_{\mathbb{C}}^1$  can be represented by a morphism  $\mathbb{P}_{\mathbb{C}}^1 \rightarrow \mathbb{P}_{\mathbb{C}}^1$ . Is this still true if all the  $\mathbb{P}_{\mathbb{C}}^1$  are replaced by  $\mathbb{P}_{\mathbb{C}}^2$ ?