

PROBLEM SET 6 (POSTED ON THURSDAY, FEBRUARY 19)

(All Exercises are references to the October 21, 2025 version of *Foundations of Algebraic Geometry* by R. Vakil.)

Problem 1. Exercise 17.1.H (the tautological bundle on \mathbb{P}_k^n)

Problem 2. Exercise 17.3.B (finite morphisms are projective)

Problem 3. Exercise 17.3.C (the cancellation theorem for projective morphisms - note that you will need the fact that base changes of projective morphisms are projective, which for some reason I thought was false in class but is actually true (Exercise 17.2.E))