HW 2
Math 672

Due Wed, Sep. 7 in class.

1. Read Chapter 2 of *An Invitation to Algebraic Geometry* (Karen Smith et. al.).
2. 2.1.1
3. 2.1.2
4. If $f : R \to S$ is a ring homomorphism and $J \subset S$ is a prime ideal, show that $I = f^{-1}(J)$ is a prime ideal in R.
5. 2.3.3
6. Prove that the coordinate ring of an affine algebraic variety is
   (a) reduced (see exercise 2.1.4 for the definition);
   (b) finitely generated as a $\mathbb{C}$-algebra;
   (c) Noetherian.
7. Just for fun (won't be graded): 2.3.4