

**HWK #3, DUE FRIDAY 11/01**

1. Let  $V \subset \mathbb{A}^n$  be an affine variety. Show that subsets

$$U_f = \{x \in V \mid f(x) \neq 0\},$$

as  $f$  ranges over the coordinate ring of  $V$ , form a base for the Zariski topology on  $X$  (that is, every open subset is a union of sets of the form  $U_f$ ).

2. Hartshorne: Chapter II, 1.1-1.8, 1.14, 1.16.