Algebraic Geometry $2^1/_2$ supplimentary worksheet 6

Domination, dominant maps, valuation rings

Critical Hartshorne problems in Chapter II

- (short term) 3.17, 3.18
- (longer term) 3.19, 3.22

1. A morphism of schemes $X \to Y$ is called dominant if it has dense image. A good source for this is the stacks project `https://stacks.math.columbia.edu/tag/01RI`. Take a look at the following facts from there:
    1. Morphisms whose image contains the generic points are dominant (Tag 01RL)
    2. Ring maps have dense Zariki images if their kernels are radical (Lemma 00FL)