

# MATH 495 Monday 3 April

## Hurwitz's theorem

To be discussed Friday 7 April / turned in Monday 10 April

- (1) Keep thinking about exercise 2.3 if you didn't solve all of it last week.
- (2) Let  $X$  be a curve embedded in  $\mathbb{P}^n$ , let  $O \in \mathbb{P}^n$  be a point not contained in  $X$ , and let  $\varphi : X \rightarrow \mathbb{P}^{n-1}$  be the morphism determined by projection from the point  $O$ . The morphism  $\varphi$  corresponds to a linear system  $\mathfrak{d}$  of dimension  $n - 1$  on  $X$ . Describe this linear system.
- (3) Chapter IV, exercise 3.2.
- (4) Chapter IV, exercise 3.6. (You'll probably want to use results from earlier exercises in this section; they may be assumed without proof.)