

Homework 5

Due at the beginning of class on Wednesday, March 18.

(17) Fix a degree d . Let $\phi: \mathbb{A}^2 \rightarrow \mathbb{A}^3$ be the morphism

$$\phi(x_1, x_2) = (x_1^d, x_1 x_2^{d-1}, x_2^d).$$

Find $I(\text{im } \phi)$.

(18) Let X be the generic 2×3 matrix, $\Delta_1, \Delta_2, \Delta_3$ be the three 2×2 minors of X , and $\phi: \mathbb{A}^6 \rightarrow \mathbb{A}^3$ be the morphism

$$\phi(p) = (\Delta_1(p), \Delta_2(p), \Delta_3(p)).$$

Find $I(\text{im } \phi)$.

(19) Hassett page 56, problem 3.25.

(20) Hassett page 69, problem 4.4.