

Week 9 Friday

Make sure you know your neighbors' names, and then discuss:

Let $S = \{(a : b)\}$ be a singleton subset of \mathbb{P}^1 and let $I = I_p(S) \subseteq k[x, y]$.
What does $C = V_a(I) \subseteq \mathbb{A}^2$ look like?

Projective Nullstellensatz

1. (A) True or (B) False? Suppose k is algebraically closed and $I \subseteq k[x_0, \dots, x_n]$ is homogeneous. Then $V(I) = \emptyset$ if and only if there exists an integer $r \geq 1$ such that every homogeneous polynomial of total degree r is in I .