## Week 7 Friday

Make sure you know your neighbors' names. Then discuss:

Fix a point  $(a_1, \ldots, a_n) \in \mathbb{A}^n(k)$  and let  $S = \{(a_1, \ldots, a_n)\}$ . Try to find two different proofs of the fact that  $I(S) = \langle x_1 - a_1, \ldots, x_n - a_n \rangle$ : one that does not assume anything about k, and one that requires knowing that k is algebraically closed.

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**Affine Hilbert Functions**