## Week 7 Wednesday

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

If  $F = (f_1, ..., f_r)$  is a finite list of polynomials in  $k[x_1, ..., x_n]$  and  $f = f_i$  is one of the polynomials in the list F, must the remainder  $\overline{f}^F$  be 0?

Affine Nullstellensatz

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1. Let k be algebraically closed and let  $I = \langle xy - z, xz - y \rangle \subseteq k[x, y, z]$ . Prove that V(I) = I.

*Possible hint*. The reduced Gröbner basis for *I* with respect to lexicographic order is  $G = \{xy - z, xz - y, yz - z\}$ .