

For each term below, give a precise definition.

1. (3 pts) Let F be a field. Define a field extension of F .

A field extension of F is a field E satisfying $F \subseteq E$.

2. (3 pts) Let E be a field extension of F and let $\alpha \in E$. Define the minimal polynomial of α over F .

The minimal polynomial of α over F is the unique monic irreducible polynomial $f(x) \in F[x]$ satisfying $f(\alpha) = 0$ (if it exists).

(More on other side.)