

Exercises

16.60 [occ] Given $p(x) = a_0 + a_1x + \cdots + a_nx^n$, $p \in \mathbb{Q}[z]$ such that $p(\alpha) = 0$, given $b \in \mathbb{Q}$ build a $q \in \mathbb{Q}[z]$ such that $q(b\alpha) = 0$.

So if α is algebraic then $b\alpha$ is algebraic.