

GALOIS THEORY: HOMEWORK 6

Due 6pm Wednesday 21st February 2024

1. Suppose that L and M are fields with an associated homomorphism $\psi : L \rightarrow M$. Show that whenever L is algebraically closed, then $\psi(L)$ is also algebraically closed.
2. Let $L : K$ be a field extension with $K \subseteq L$. Let $\gamma \in L$ be transcendental over K , and consider the simple field extension $K(\gamma) : K$. Show that $K(\gamma)$ is not algebraically closed.

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