

Week 10 Galois Theory
Jacobson I: 4.2, 4.11, 4.14

1. Jacobson I 4.2.2
2. Jacobson I 4.11.2
3. Jacobson I 4.11.3
4. Jacobson I 4.14.4
5. Suppose that E is a subfield of the complex numbers. Show that the set E_0 of real numbers in E is a subfield of E . If E/\mathbf{Q} is Galois, show that E_0/\mathbf{Q} is Galois if and only if $\text{Gal}(E/E_0)$ is in the center of $\text{Gal}(E/\mathbf{Q})$.