Complexity of algebraic computation

Homework assignment #8

1. Let $F$ be a field. prove that in $F(\lambda)/(\lambda^{2n^3} + \lambda^{3n} + 1)$, $\lambda$ is a $3^{n+1}$ principal root of 1.

2. Give a sufficient and necessary condition on $p$, $c$, and $m$ for $\mathbb{Z}(\lambda)/(p^c, \lambda^m + 1)$ to be a field.

3. Solve the recurrence on the last page of Lecture 8.