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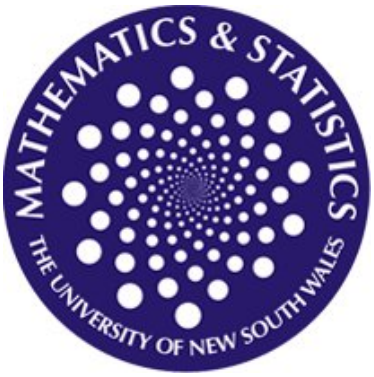

University of New South Wales

School of Mathematics and Statistics

Assignment 1

Galois Theory

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Question 1

For this question, $n > 1$ and k is a field containing a primitive nth root of unity, and the characteristic of k does not divide n.
Let $a \in k$ be such that the polynomial $P_a(x) = x^n - a$ has no root in k.
Let $K_{a,n} = k(\sqrt[n]{a})$ be a field extention of k generated by a root of P_a.