

Problem sheet 10
2005, March. 17

MT361 ERROR CORRECTING CODES

Ex. 1

Show that the Latin squares L_1 and L_3 of order 4 are not orthogonal. Construct two orthogonal Latin Squares of order 4 as follows:

Construct the field of 4 elements by taking all polynomials with coefficients 0 and 1, and reduce modulo $x^2 + x + 1$.

Show that the 4 elements are: $0, 1, x, x + 1$.

Write down the addition and multiplication table of this field. From this find two MOLS of order 4. Bring them into standard form.