

Winter 2018, Math 148: Week 9 Preliminary Problems
Due: Thursday, March 8th, 2018
Error Correcting Codes

Preliminary problems. These problems should be completed before discussion on Thursday.

(P1) Find the minimum distance δ between any two codewords in the following code.

$$\{1110001, 1001001, 1010101, 0011111, 0011100\} \subset V^7$$

How many errors does this ensure you can correct?

(P2) Determine whether the codewords in Problem (P1), viewed as vectors in a 7-dimensional vector space over \mathbb{F}_2 , are linearly independent. Hint: the most efficient way to do this is to row reduce a certain matrix!