Magma Homework Due Fri, Feb 14

1. Define the BCH code of length 15 and designed distance 5 over GF(2). (Find out how to do this from Magma help/manual).

2. Find its parameters and a generator matrix.

3. Encode the message (1,1,0,0,1,0,0). Call the encoded message v.

4. Introduce 2 errors at positions 4 and 13 of v. Call this vector in error w.

5. Decode w using syndromes. (Do NOT print out the set of all cosets or coset leaders. There are too many)

6. Recover the original message (before encoding).

You should write an input file containing your Magma commands and write the output to another file. Submit hard copies of both files.