
Read Chapter 1 of the textbook (Hankerson, et al.).

While you are reading, do all the exercises. Most of them are quick and easy, and most of them have answers in the back of the book. When they ask you to repeat the same exercise on many different codes, quit when you feel you have mastered it. You are responsible for knowing how to do all the things in the exercises.

Write up and hand in solutions to the following exercises.

Exercises in textbook, Chapter 1

Sec. 1.3, p. 6, #1.3.6
Sec. 1.7, p. 11, #1.7.2, 1.7.3 (Use #1.7.1)
Sec. 1.8, p. 12, #1.8.4 (7)–(9) (You may use facts (1)–(6) from that list.)
Sec. 1.9, p. 15, #1.9.7 (a), (d)
Sec. 1.11, pp. 20–21, #1.11.5, #1.11.10 (a), (d); #1.11.12 (a), (d)

Extra Credit:

1. For the code in Exercise #1.3.6, can there be more than one closest codeword to a single received word? If so, give an example. If not, explain why not.

2. Let $x, y, z \in K^n$, with $d(x, y) = d(y, z) = d(x, z) = 2$. Show that there is a unique word $v \in K^n$ such that $d(x, v) = d(y, v) = d(z, v) = 1$. 