

COMBINATÓRIA E TEORIA DE CÓDIGOS

Homework 2 (deadline 15/3/2013, in class)

1. Exercise 2.2 in Hill. Give a complete and detailed justification for your answer.
2. Let C be the binary repetition code of odd length $n = 2t + 1$, i.e., let $C = \{\vec{1}, \vec{0}\}$, where $\vec{0} = (0, \dots, 0)$ and $\vec{1} = (1, \dots, 1)$. Show that $\{B_t(\vec{0}), B_t(\vec{1})\}$ is a perfect cover, and conclude that C is a perfect code.
3. Exercises 3.7, 3.8 and 3.12 in Chapter 3 of the notes.