Homework3

Due Date: May 25th

You can either email your answer to fernando@tsc.uc3m.es before the afternoon lecture or hand it in during the afternoon lecture.

- 1. Prove that for if the sequences $A = (a_1, \ldots, a_4)$ and $B = (b_1, \ldots, b_4)$ are Golay complementary pairs, then the sequences C = (A, B) and D = (A, -B) are also Golay complementary pairs. First, you can check that for A = (1, 1, 1, -1) and B = (1, 1, -1, 1), the result holds. Hint: If A and B are Golay complementary, it means that $a_1a_2 + a_2a_3 + a_3a_4 = -(b_1b_2 + b_2b_3 + b_3b_4)$, $a_1a_3 + a_2a_4 = b_1b_3 + b_2b_4 = 0$ and $a_1a_4 = -b_1b_4$.
- 2. Prove the theorem in Slide 7 at Lecture 6B. Hint: Slide 4.