COS 341, November 25, 1998
Due: December 2, 1998

Homework Set 7

Reading Assignments Read Chapter 12.

Written Assignments Do Exercises 5, 12, 20, 26, 29 and 40 in Chapter 11.9.

Special Problem (counted as 2 exercises) An ancient DNA fragment of a dinosaur has just been found. It is known that this critical fragment σ contains some critical information. If the string $ACGAACT$ appears in $\bar{\sigma}$, then it can fly; if the string $CTCACG$ appears in $\bar{\sigma}$, then it is vegetarian; if the string $TGACCT$ appears in $\bar{\sigma}$, then it is a timid dinosaur.

The fragment has length 17, and you have subjected it to the hybridization procedure with $\ell = 4$. The spectrum S you get consists of the strings $ACGA$, $AACT$, $ACTC$, $ACGT$, $GACT, CTCA, CGAA, CTGA, TGAC$, $GAAC, GACG$, $ACTG, CACG, TCAC$. What kind of dinosaurs can you infer? What is G_S? What is G'_S? Find all the σ which has S as its spectrum.