Mathematics 331 – Homework #4

due Friday, March 4 at the beginning of class

Reading: Chapter 3. The theory is mainly in sections 3.2, 3.4 and 3.14.

My advice is to begin by reading over sections 3.1–3.4 and then try some of the warmup and assigned problems on *labeled* counting, referring back to the appropriate sections in the text for the relevant examples. The sketched solutions at the back of the book are a useful guide.

A different proof will be given in class for the important *exponential formula* (Theorem 3.4.1), more like the discussion we have had of the Stirling numbers of the second and first kind.

Problems 3–18 through 3–21 are about *unlabeled* counting which is treated in sections 3.14–3.16. You will probably find that you don't really need the discussion of *prefabs* in section 3.14 to understand the examples and to do the problems. Unlabeled counting is in general a more difficult subject than labeled counting but the special topics treated here are some interesting and accessible parts of that subject.

Warmup questions (don't hand in): 3-3, 3-6, 3-10, 3-20

Homework (due March 4). The 8 problems this time are all taken from the text:

Labelled counting: 3–5, 3–7, 3–8, 3–9, 3–15, 3–17,

Unlabelled counting: 3–19, 3–21