Homework 4

Math 472, Spring 2011

(Assigned on Friday, 1/28/11, Due on Tues, 2/1/11)

1. Suppose we have three values of Q, so that $Q(1) < Q(2) < Q(3)$. Show that, using the softmax update as on p. 8 of the notes (Case Study), compute the limit of $P(1), P(2), P(3)$ as $\tau \to 0$, and the limit as $\tau \to \infty$.

2. (Exercise 4, p. 11) Using the win-stay, lose-shift strategy, show that if the probability for machine a is never the maximum, then $P(a) \to 0$ as $t \to \infty$ (use the hint).

3. (Exercise 5, p. 11)

4. Save the Matlab code for the two algorithms (4 Matlab files) and be sure you can run the scripts and interpret the output. (Nothing to turn in, we'll discuss after you have finished).

5. From your linear algebra text, summarize *the least squares problem*, and how to find the solution (we'll be working with this on Tuesday).