

STA447/2006 (Stochastic Processes), Winter 2008

Homework #4

Due: In class by 6:10 p.m. **sharp** on Thursday April 10. (If you prefer, you may bring your assignment to the instructor's office, Sidney Smith Hall room 6024, any time before it is due; slide it under the door if he is not in.) **Warning: Late homeworks, even by one minute, will be penalised!** (See the "Grade-Related Course Policies".)

Reminder: You are welcome to discuss these problems in general terms with your classmates. However, you should figure out the details of your solutions, and write up your solutions, entirely on your own. Copying other solutions is strictly prohibited!

THE ASSIGNMENT: [Point values are indicated in square brackets. It is very important to **EXPLAIN** all your solutions very clearly.]

Include at the top of the first page: Your name and student number, and whether you are enrolled in STA447 or STA2006.

1. [10 points] Text exercise 8.17 (p. 203).
2. [10 points] Text exercise 8.19 (p. 203). [Hint: don't forget detailed balance.]
3. [10 points] Text exercise 8.25 (p. 204).
4. [10 points] Text exercise 5.4 (p. 234).
[Hint: First prove that $\mathbf{P}(M > n) = \frac{1}{n!}$, and don't forget Wald's Equation.]
5. [10 points] Text exercise 6.1 (p. 265).
6. [10 points] Text exercise 6.4 (p. 265).
7. [10 points] Text exercise 6.39 (p. 270).