CS280 Homework 7
Grading Guide

Section 4.4

14. 5 pts total. 2 for getting C(13. 5), 2 for getting $C(4,1)^5$, 1 for the final answer (can be either fraction or decimal). –1 for each part that is only partially correct (e.g. using C(4,1) instead of $C(4,1)^5$)

18. 5 pts total. 2 for getting C(4,1), 2 for getting 10 possible leading cards, 1 for final answer.

26. 4 pts total, 2 for each part. You get 1 pt for each part if you are partially correct.

34. 6 pts total, 2 for each part. 1 for correct answer, 1 for proof. Just saying "E_1 influences E_2" is not enough.

Section 4.5 Part I

Problem 4.5.8 (5 points) 2 points for showing the base case (n=1 and n=2, Bonneferoni's), 1 point for stating the induction hypothesis, 2 points for the induction step.

Problem 4.5.18 (5 points) 1 point for computing each of P(E), P(F), P(E∩F), P(E)*P(F). 1 point for stating that they are independent. Note that stating E, F are independent without proof will receive no credit.

Problem 4.5.22.a. (1 point), **4.5.22.b.** (2 points) 1 point dedcuted for having extraneous coefficients multiplying the correct solution, **4.5.23.c.** 1 point dedcuted for having extraneous coefficients multiplying the correct solution or deducting other quantities from the correct solution.

Problem 4.5.26.b. (2 points) 1 point for stating P(Atleast one success)=1-P(No success) (if stated). 1 point deducted for extra coefficients or terms with the right answer. **4.5.26.d.** (3 points)1 point for stating P(Atleast two successes)=1-P(No success) - P(One success) (if stated). 1 point deducted for extra coefficients or terms with the right answer.

Section 4.5 Part II

38. (5 marks)

Full credit for recognizing that this is the sum of a geometric series to infinity

2 marks taken off for incomplete working, or incorrect terms

40. (5 marks)

Full credit given for correct answers not in closed form,
(i.e. $\Sigma\, n(1/2)^n$)
Full credit given to answers which do not assume unbiased coin, i.e. E(N) = 1/p
3 marks taken off for incorrect form, (i.e. $\Sigma\, (1/2)^n$, etc.)

44. (5 marks)

Full credit given to alternative working which generate correct answer:
some students found EX and EX^2 by considering all the 11 possible answers for X (0 to 11), and used it to find variance: $VAR(X) = EX^2 - (EX)^2$
2 marks taken off for answers which used this formula:
$VAR(X) = EX^2 - (EX)^2$ but got EX or EX^2 wrong, and as a result, obtained an incorrect answer.

48(a) (5 marks)

Full credit given for correct answer (regardless of workings)
1 mark taken off for trivial errors in simplifying terms. (e.g. 10000/11000 → 1/11)
1 mark taken off for subtracting the correct answer (10/11) from 1 to get 1/11, and incorrectly assuming that to be the upper bound.