

STAT 479
Spring 2012
Quiz 8
April 19, 2012

1. You have the following data on the number of health insurance claims in a year under a major medical policies:

Number of Claims	Number of Policies
0	48
1	32
2	13
3-5	5
6+	2

You want to test that hypothesis that number of claims in a year is distributed as a Poisson distribution with a mean of 1.

Use the Chi Square Test to determine if you would accept or reject this hypothesis at a 99% significance level.

2. Chong Car Insurance Company sells an automobile insurance policy that provides the following benefits:
- a. For the first accident in a calendar year, it pays 100% of the claim;
 - b. For the second accident in a calendar year, it pays 80% of the claim after a 250 deductible. For example, a claim of 1000 would be paid as $0.8(1000 - 250) = 600$.
 - c. For the third claim in a calendar year, it pays 50% of the claim after a 250 deductible
 - d. For the fourth or more claims in a calendar year, it pays a flat payment of 500 for each additional claim. In other words, if you have a fourth claim, it pays 500. If you have a fifth claim, it pays another 500, etc.

You simulate amount of aggregate claims for each insured by first simulating the number of claims and then simulating the amount of each claim using the inversion method.

The number of claims is assumed to be Poisson with a mean of 0.5.

The amount of each claim is assumed to be distributed as an exponential with a mean of 1000.

Use the following random numbers on a uniform distribution from 0 to 1 to estimate the amount of aggregate claims paid by Chong for the first insured in the simulation.

0.95 0.2 0.4 0.5 0.1 0.9 0.2