Problem Set #2

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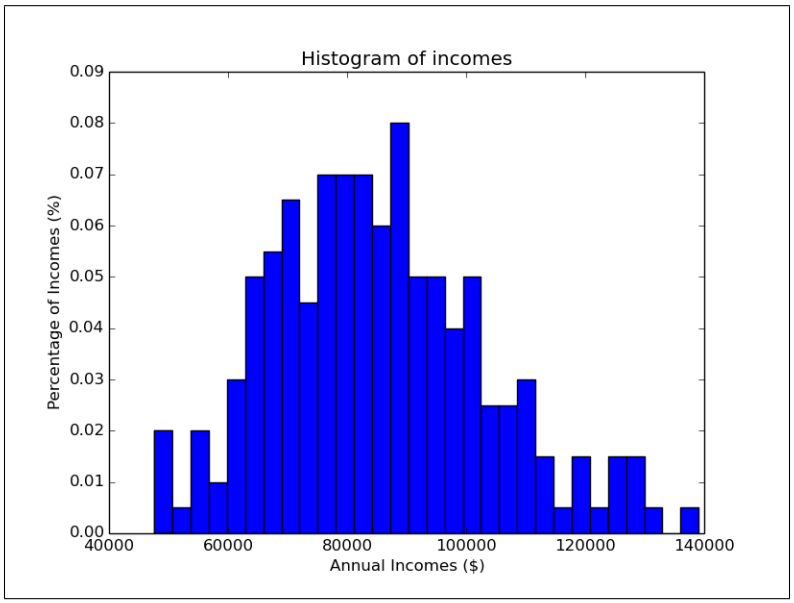
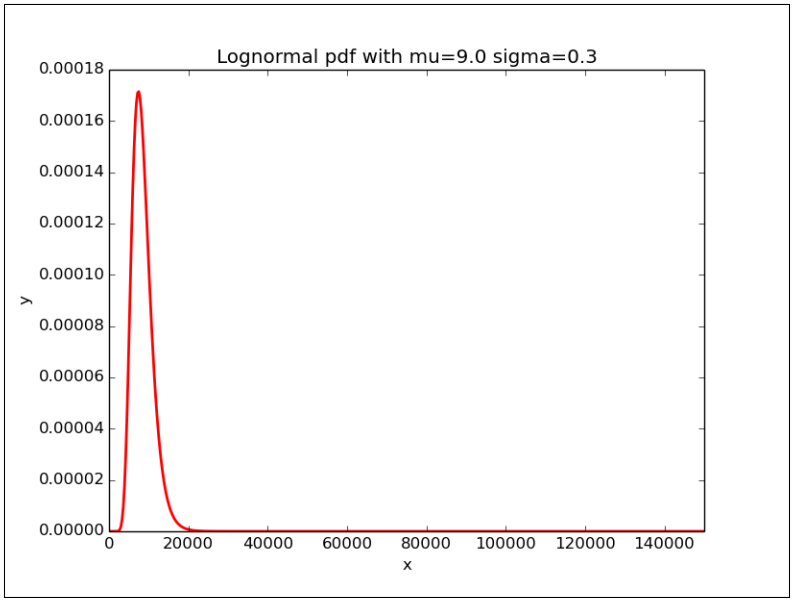
Problem 1 Part (a).

Figure 1: Histogram for Income



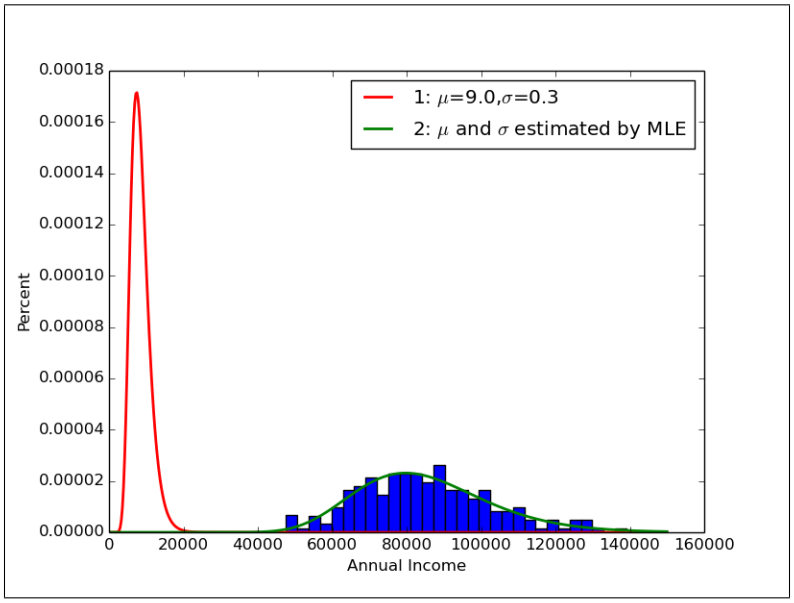
Part (b). The log likelihood given this data is: -8298.6

Figure 2: Lognormal PDF



Part (c). The estimation value for mu is 11.33 The estimation value for sigma is 0.21 The value of the likelihood function is: -2239.53 The vcv matrix is: [3.15,4.26],[4.26,1.12]

Figure 3: Lognormal PDF



Part (d). Chi squared of H0 with 2 degrees of freedom p-value=0. So we reject the null hypothesis.

Part (e). The probability that I will earn less than 75000 is: 30.77% The probability that I will earn more than 100000 is: 19.58%

Problem 1 Part (a). The estimation for sigma is: 0.0075 The estimation for beta0 is: -0.6278 The estimation for beta1 is: 0.0249 The estimation for beta2 is: -0.0322 The estimation for beta3 is: 2.4957 The value of the likelihood function is: 693.90 The varibale-covaricance matrix is: [1,0,0,0,0] [0,1,0,0,0] [0,0,1,0,0] [0,0,0,1,0] [0,0,0,0,1]

Part (b). Chi squared of H0 with 5 degrees of freedom p-value=0. So we reject the null hypothesis.