1) Nituba is a warehouse for distributing home appliance distributor. One type of product that Nituba distributes is a new SL model dish washer. For that product the warehouse decides to use the (Q,R) model and collects the following data. Product costs $200 and the annual interest rate is 20%. Annual demand is normally distributed with a mean 5200 and standard deviation of 72.111. Cost of placing an order is $100 and the cost of each stockout occasion is $400. Order lead time is expected to be 1 week (1/52 years). Answer the following questions based on the data provided:

a) (2 Points) Compute the mean and standard deviation of demand during lead time.

b) (4 Points) If the firm wants to achieve a 95% type 1 service level, what are the optimal (Q,R) values?

c) (10 Points) If the firm wants to achieve a 95% type 2 service level, what are the optimal (Q,R) values?

d) (5 Points) Interpret type 1 and 2 service levels and explain why R is higher under type 1 service level requirement.

e) (4 Points) What are the corresponding imputed shortage costs for part b and c.