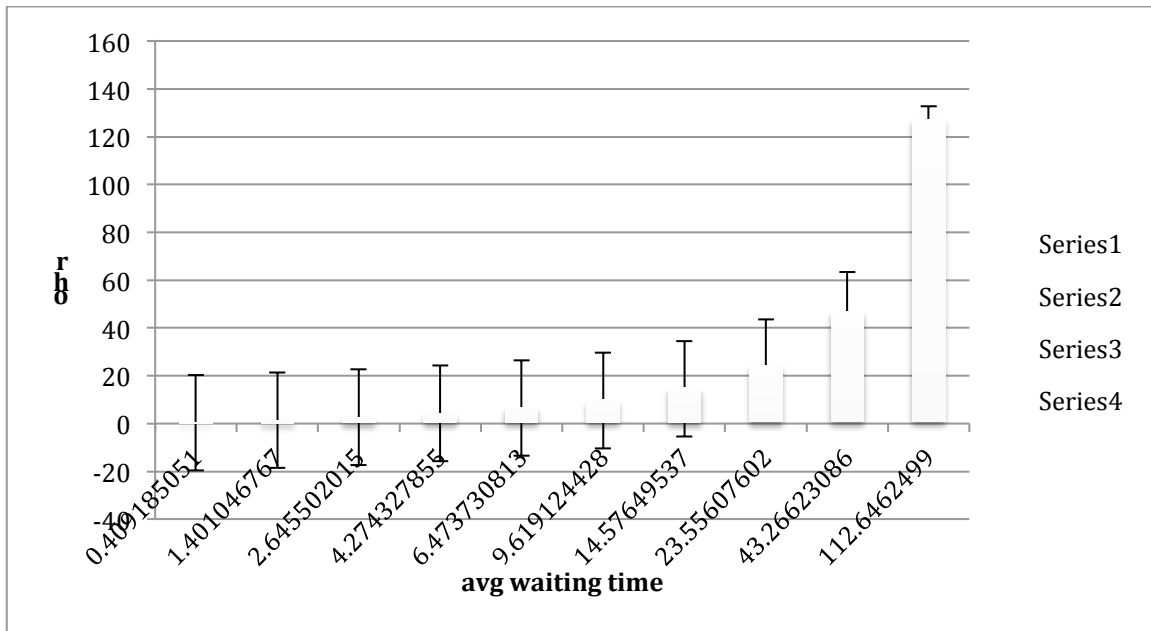


## HomeWork-5

### Problem1:

We calculate 95% confidence interval based on the normal distribution and a relative-precision of 0.1.

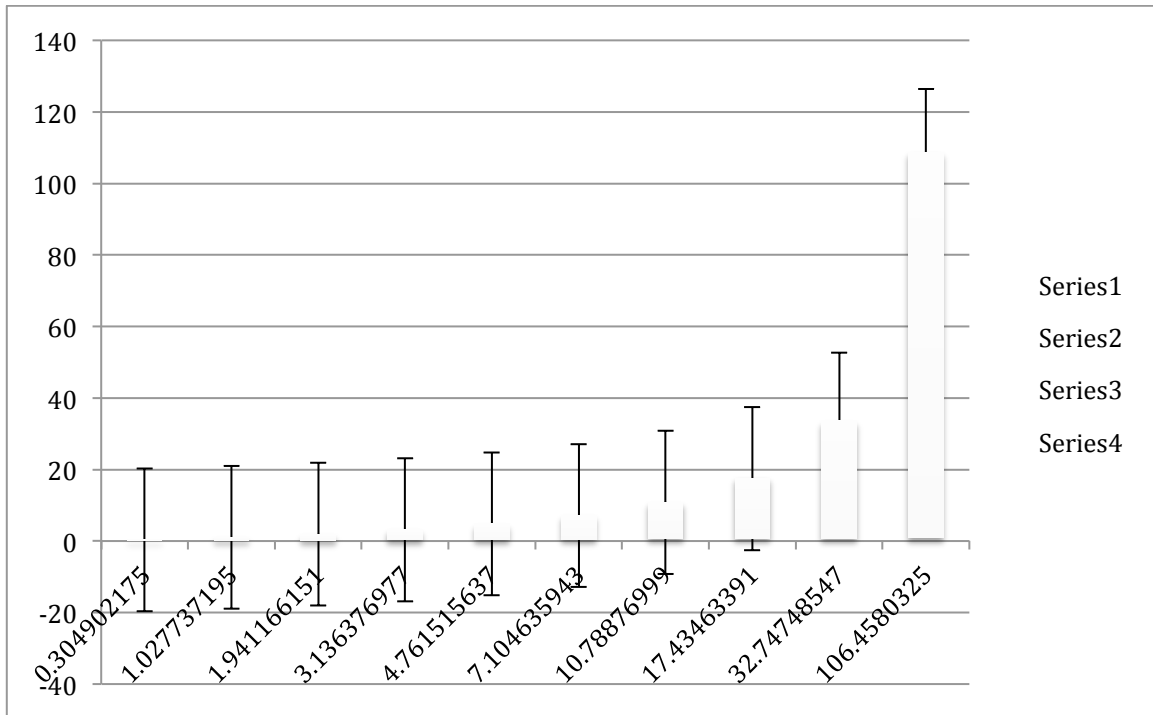


### Problem2:

We need to generate the antithetic variates.

$$Y = -(1/\lambda) \log(1 - \exp^{-\lambda X})$$

The Graph Obtained is shown below:



Problem3:

To calculate the control variate we first find the

$$V_i = Y_i + c'(Z_i - E[Z])$$

Where  $c' = -\text{Cov}(Y, Z) / \text{Var}(Z)$

