Reprot:

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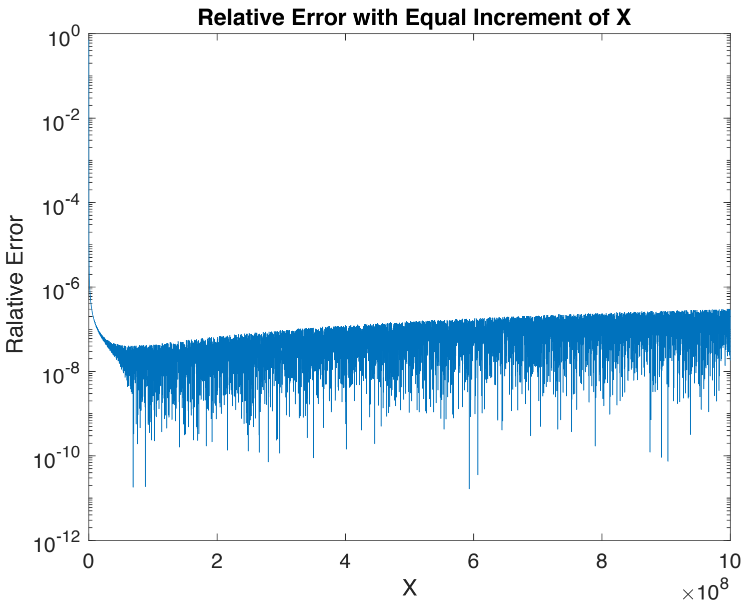
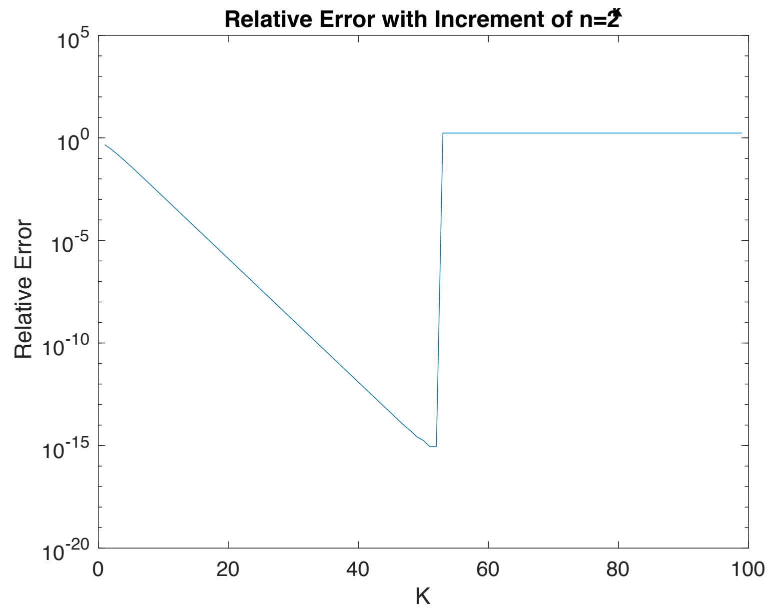
a)





b)Figure on the left shows the relative error with equal increment of X with step size of 10,000. As the figure shows, the relative error decrease into certain amount as the x value get large. This algorithm has relatively good robustness as we can see the relative error vary between 10^(-11) to 10^(-7) as the x value increase to 10^9.

Figure on the right increment by n = 2 ^k for k = 1, 2 … 99. With the increase value of k, the relative error got decrease for certain interval then bounce back into the larger relative error. This shows that the limit e = (1 + 1 / n) ^n has its limitation as n value got too large.

c)This result, however, should not show limit e = (1 + 1 / n) ^n as a bad algorithm as there involves the rounding error as n value got too large. Because floating point calculation on machine has limit, this would incurs error as 1 + 1 / n = 1 when n got too large. That is the reason why the relative error got a sudden bounce that is similar as n =1.