2^{31} - 1 for a full period.

Choice to be taken

$m = p = 2^{31} - 1 = 2147,483,647$; $a = 16,807$,

$c = 0$.

$m = p = 2^{16} - 1$ (for our computers)

Assignment

1. Generate a sequence of $n = 10,000$ numbers ~~using~~ and test for goodness of fit.

Algorithm

1) Generate $n = 10,000$ such numbers and convert them to uniform random nos.

2) Prepare a freq. distn. with k class intervals of equal length.

3) If f_j is the freq. of j^{th} class with expected freq $= np_j = nP\left\{ X \in \left[\frac{j-1}{k}, \frac{j}{k}\right] \right|$

$X \sim R(0,1)\}$,

$j = 1, 2, \ldots, k$

using $Q = \sum_{j=1}^{k} \frac{(f_j - np_j)^2}{np_j}$ (χ^2-statistic)

4) Reject the null hypothesis if

$Q > \chi^2_{\alpha, k-1}$