

quose from a Bernoulli process is rejected. ^{P.S. no opposite}

```
v=chain_(1000,0.2258,0.3333)
runs(v)
#eq(v,0) 287
#eq(v,1) 616
#eq(v,1) 384
```

There were 207 runs.

The number of runs expected is given by

$$E(R) = 2n_0n_1$$

$$n_0 + n_1$$

$$\frac{6}{1000} = 2 \times 616 \times 384 = 473$$

The number of runs observed is much less than the number expected. My suspicions are confirmed. That the sequence was not generated by a Bernoulli process.

b)i)

```
func pp(){
  local(tt,rr,et,vv)
  tt=$1$
  rr=$2$
  et=mrnd(1/rr)
  if(et<=tt) vv=(et,) else vv=(0,)
  while(et<=tt){
    et=et+mrnd(1/rr)
    if(et<=tt) vv=vec(vv,et)
  }
  return vv
}
```

pp(4000,1/437)	391.9	1056	1082	1505	1570	2021
	2125	2289	2607	2857	3737	
pp(4000,1/437)	506.1	606.2	990.8	1444	4458	1834
	2815	2975	3065	3165	3297	
pp(4000,1/437)	154.2	230.3	279.9	532.1	715	942.4
	1977	2861	3560	3766	3778	
pp(4000,1/437)	469.7	830.6	1302	1487	2255	2730
	3714	3763	3830	3957		
pp(4000,1/437)	1228	1402	2159	2261	3152	

In the first, second, third, fourth and fifth realizations there were 11, 11, 11, 8 and 5 earthquakes respectively.