

APPENDIX: A-4

PROGRAM IN BASIC:

```
10 DIM X(500)
20 RANDOMIZE TIMER
30 INPUT THETA , T
40 RT=EXP(-T/THETA)
50 LPRINT "THETA=";THETA,"T=";T,"RT=";RT
60 LPRINT "-----"
70 LPRINT "D","EN","VAR(N)","E(RT)"
80 LPRINT "-----"
90 D=0.2
100 EN=0:VN=0:R=0
110 FOR I=1 TO 500
120 S=0:K=5
130 FOR J=1 TO K
140 U=RND
150 IF X(J)=-THETA*LOG(U)
160 S=S+X(J)
170 NEXT J
180 M=S/K:RTE=EXP(-T/M)
190 C=M*M*EXP(2*T/M)*D*D
200 AN=1.96+.01/K
210 IF K>T*T*AN*AN/C THEN 280
```

```
220 K=K+1
230 U=RND
240 X(K)=-THETA*LOG(U)
250 S=S+X(K)
260 GOTO 180
270 EN=EN+K:VN=VN+K*K:R=R+RTE
280 NEXT I
290 EN=EN/500:VN=VN/500-EN*EN:R=R/500
300 LPRINT D,EN,VN,R
310 D=D-0.02:IF D≥0.06 THEN 100
320 LPRINT "-----"
330 END
```