/\* 1.a \*/  
%let seed=54321;  
%let reps=10000;  
%let obs=50;  
  
data simsk;  
call streaminit(&seed);  
do rep=1 to &reps;  
 do i=1 to &obs;  
 x=rand("expo");  
 output;  
 end;  
end;  
run;  
  
/\* 1.b \*/  
proc means data=simsk noprint;  
by rep;  
var x;  
output out=moments(drop=\_type\_ \_freq\_) Kurtosis=;  
run;  
proc transpose data=moments out=Long(rename=(col1=Kurtosis));  
by rep;  
run;  
/\* 1.c \*/  
proc sgplot data=Long;  
title "Kurtosis Bias in Small Samples: n=50";  
density Kurtosis/ type=kernel legendlabel="Kernel";  
run;  
  
  
/\* 2.a \*/  
proc iml;  
call randseed(&seed);  
x=j(&reps,&obs);  
call randgen(x,"expo");  
create unif from x;  
append from x;  
close unif;  
quit;  
/\* 2.b \*/  
proc means data=unif noprint;  
by rep;  
var x;  
output out=moments2(drop=\_type\_ \_freq\_) Kurtosis=;  
run;  
proc transpose data=moments2 out=Long(rename=(col1=Kurtosis));  
by rep;  
run;  
/\* 2.c \*/  
proc sgplot data=Long;  
title "Kurtosis Bias in Small Samples: n=50";  
density Kurtosis/ type=kernel legendlabel="Kernel";  
run;