**EXAM CODES**

**data** homework1 ;

input Subfamily $ Pre1960 Post1960 Minimum Maximum ;

total=pre1960+post1960;

Avesize=(minimum+maximum)/**2**;

logtotal=log10(total);

logsize=log10(avesize);

**proc** **univariate** data=homework1 plot;

var total avesize logtotal logsize;

**run**;

**proc** **gplot** data=homework1;

plot total\*avesize=subfamily

logtotal\*logsize=subfamily;

**run**;

**proc** **gchart** data=homework1;

hbar total logtotal avesize logsize / levels=**10**;

**run**;

**proc** **gchart** data=homework1;

hbar total logtotal avesize logsize / levels=**5**;

**run**;

**proc** **corr** data=homework1;

var total avesize logtotal logsize;

**proc** **sort** data=homework1;

by subfamily;

**proc** **univariate** data=homework1 plot;

by subfamily;

var total avesize logtotal logsize;

**run**;**quit**;

hw2

**data** random2;

retain seed1 **2766**;

retain seed2 **5897**;

do x=**1** to **1000**;

\*\*\*repetitions;

r1=ranuni(seed1);

r2=ranuni(seed2);

\*\*\*you must lock the random number by assigning it a value r1 or r2;

\*\*\*otherwise each use of the function generates another number;

if r1<**0.55** and r2<**0.55**

then females = **2**;

else if r1>=**0.55** and r2>=**0.55**

then females = **0**;

else females=**1**;

output;

end;

**proc** **univariate** data=random2 freq;

var females;

**proc** **gchart** data=random2;

VBAR FEMALES / MIDPOINTS=**0** **1** **2**;

**run**;

**data** random2;

retain seed1 **2654**;

retain seed2 **3369**;

do x=**1** to **1000**;

\*\*\*repetitions;

r1=ranuni(seed1);

r2=ranuni(seed2);

\*\*\*you must lock the random number by assigning it a value r1 or r2;

\*\*\*otherwise each use of the function generates another number;

if r1<**0.55** and r2<**0.55**

then females = **2**;

else if r1>=**0.55** and r2>=**0.55**

then females = **0**;

else females=**1**;

output;

end;

**proc** **univariate** data=random2 freq;

var females;

**proc** **gchart** data=random2;

VBAR FEMALES / MIDPOINTS=**0** **1** **2**;

**run**;

**data** randomnorm;

retain seed1 **1104094**;

Do Ns=**4**,**16**,**64**,**100** /\*Ns is the sample size\*/;

do j=**1** to **100** /\*j is the number of

repeated samples (reps)\*/;

do number=**1** to Ns;

x1=rannor(seed1);

output;

end;

end;

end;

**run**;

**proc** **univariate** data=randomnorm noprint;

var x1 ;

by Ns j notsorted;

output out=summary mean=mean n=n std=sd;

**run**;

**proc** **print** data=summary;

**proc** **means** data=summary;

by Ns notsorted;

var mean;

**run**;

**data** random2;

retain seed1 **5665**;

retain seed2 **2358**;

do x=**1** to **10**;

\*\*\*repetitions;

r1=ranuni(seed1);

r2=ranuni(seed2);

\*\*\*you must lock the random number by assigning it a value r1 or r2;

\*\*\*otherwise each use of the function generates another number;

if r1<**0.55** and r2<**0.55**

then females = **2**;

else if r1>=**0.55** and r2>=**0.55**

then females = **0**;

else females=**1**;

output;

end;

**proc** **univariate** data=random2 freq;

var females;

**proc** **gchart** data=random2;

VBAR FEMALES / MIDPOINTS=**0** **1** **2**;

**run**;

**data** random2;

retain seed1 **2654**;

retain seed2 **3369**;

do x=**1** to **50**;

\*\*\*repetitions;

r1=ranuni(seed1);

r2=ranuni(seed2);

\*\*\*you must lock the random number by assigning it a value r1 or r2;

\*\*\*otherwise each use of the function generates another number;

if r1<**0.55** and r2<**0.55**

then females = **2**;

else if r1>=**0.55** and r2>=**0.55**

then females = **0**;

else females=**1**;

output;

end;

**proc** **univariate** data=random2 freq;

var females;

**proc** **gchart** data=random2;

VBAR FEMALES / MIDPOINTS=**0** **1** **2**;

**run**;

**data** random2;

retain seed1 **1568**;

retain seed2 **6509**;

do x=**1** to **50**;

\*\*\*repetitions;

r1=ranuni(seed1);

r2=ranuni(seed2);

\*\*\*you must lock the random number by assigning it a value r1 or r2;

\*\*\*otherwise each use of the function generates another number;

if r1<**0.55** and r2<**0.55**

then females = **2**;

else if r1>=**0.55** and r2>=**0.55**

then females = **0**;

else females=**1**;

output;

end;

**proc** **univariate** data=random2 freq;

var females;

**proc** **gchart** data=random2;

VBAR FEMALES / MIDPOINTS=**0** **1** **2**;

**run**;

**data** random2;

retain seed1 **8995**;

retain seed2 **2786**;

do x=**1** to **100**;

\*\*\*repetitions;

r1=ranuni(seed1);

r2=ranuni(seed2);

\*\*\*you must lock the random number by assigning it a value r1 or r2;

\*\*\*otherwise each use of the function generates another number;

if r1<**0.55** and r2<**0.55**

then females = **2**;

else if r1>=**0.55** and r2>=**0.55**

then females = **0**;

else females=**1**;

output;

end;

**proc** **univariate** data=random2 freq;

var females;

**proc** **gchart** data=random2;

VBAR FEMALES / MIDPOINTS=**0** **1** **2**;

**run**;

Hw3

**DATA** TEST1;

INPUT TREE B A;

DIFF=B-A;

datalines;

**PROC** **TTEST** DATA=TEST2;

title 'two sample t';

CLASS food;

VAR mass logm sqm;

**PROC** **NPAR1WAY** WILCOXON;

CLASS food;

VAR mass;

**PROC** **UNIVARIATE** NORMAL;

BY food NOTSORTED;

VAR mass logm sqm;

**DATA** TEST2;

INPUT food $ mass;

LOGM=LOG10(mass);

sqm=sqrt(mass);

datalines;

**PROC** **TTEST** DATA=TEST2;

title 'two sample t';

CLASS food;

VAR mass logm sqm;

**PROC** **NPAR1WAY** WILCOXON;

CLASS food;

VAR mass;

**PROC** **UNIVARIATE** NORMAL;

BY food NOTSORTED;

VAR mass logm sqm;

**RUN**;

Hw4

**data** example;

input treat $ y;

datalines;

**PROC** **GLM** DATA=AOVEX001;

CLASS TREAT;

MODEL Y = TREAT;

MEANS TREAT / REGWQ TUKEY

HOVTEST=BF;

output out=resdata r=resid p=predict;

estimate 'control vs treat' treat **4** -**1** **1** **1** **1**;

estimate 'macro vs micro' treat **0** **0.5** **0.5** -**0.5** -**0.5**;

estimate 'Boron vs copper' treat **0.5** **0** **0.5** **0** **0**;

estimate 'Potassium vs Phosphorous' treat **0** **0** **0** **0.5** **0.5**;

**proc** **univariate** data=resdata plot normal;

var resid;

**proc** **gplot** data=resdata;

plot resid\*predict;

**RUN**;

**RUN**;