**HW2 in R Aishwarya Kulkarni**

**Traditional Analysis**

> Size<-c(0.01,0.05,0.1)

> Critical<-qnorm(Size)

> Error in qnorm(Size) : object 'Size' not found

Error: unexpected 'in' in "Error in"

> Critical<-qnorm(Size)

> Critical

[1] -2.326348 -1.644854 -1.281552

> Power<-c(0.8,0.9,0.95)

> Critical1<-qnorm(1-Power)

> Critical1

[1] -0.8416212 -1.2815516 -1.6448536

> Sample<-matrix(0,nrow=9,ncol=9)

> prop<-seq(0.1,0.9,0.1)

> prop

> 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> Size<-c(0.01,0.05,0.1)

> Critical<-qnorm(Size)

> Critical

[1] -2.326348 -1.644854 -1.281552

> Power<-c(0.8,0.9,0.95)

> Critical1<-qnorm(1-Power)

> Critical1

[1] -0.8416212 -1.2815516 -1.6448536

> Sample<-matrix(0,nrow=9,ncol=9)

> prop<-seq(0.1,0.9,0.1)

> prop

[1] 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> for(i in 1:9)

+ {

+ for(j in 1:9)

+ {

+ Sample[i,j] <-round(((Critical[1]\*sqrt(prop[i]\*(1-prop[i]))+Critical1[1]\*sqrt(prop[j]\*(1-prop[j])))/(prop[i]-prop[j]))^2)

+ }

+ }

> rownames(Sample)<-c("p0=0.1","p0=0.2","p0=0.3","p0=0.4","p0=0.5","p0=0.6","p0=0.7","p0=0.8","p0=0.9")

> colnames(Sample)<-c("p1=0.1","p1=0.2","p1=0.3","p1=0.4","p1=0.5","p1=0.6","p1=0.7","p1=0.8","p1=0.9")

Level = 1% and Power = 80%

> Sample

p1=0.1 p1=0.2 p1=0.3 p1=0.4 p1=0.5 p1=0.6 p1=0.7 p1=0.8 p1=0.9

p0=0.1 Inf 107 29 14 8 5 3 2 1

p0=0.2 140 Inf 173 45 20 11 7 4 3

p0=0.3 43 197 Inf 219 55 24 13 8 5

p0=0.4 22 54 233 Inf 244 60 26 14 8

p0=0.5 13 25 60 248 Inf 248 60 25 13

p0=0.6 8 14 26 60 244 Inf 233 54 22

p0=0.7 5 8 13 24 55 219 Inf 197 43

p0=0.8 3 4 7 11 20 45 173 Inf 140

p0=0.9 1 2 3 5 8 14 29 107 Inf

> Size<-c(0.01,0.05,0.1)

> Critical<-qnorm(Size)

> Critical

[1] -2.326348 -1.644854 -1.281552

> Power<-c(0.8,0.9,0.95)

> Critical1<-qnorm(1-Power)

> Critical1

[1] -0.8416212 -1.2815516 -1.6448536

> Sample<-matrix(0,nrow=9,ncol=9)

> prop<-seq(0.1,0.9,0.1)

> prop

> 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> for(i in 1:9)

+ {

+ for(j in 1:9)

+ {

+ Sample[i,j] <-round(((Critical[1]\*sqrt(prop[i]\*(1-prop[i]))+Critical1[2]\*sqrt(prop[j]\*(1-prop[j])))/(prop[i]-prop[j]))^2)

+ }

+ }

> rownames(Sample)<-c("p0=0.1","p0=0.2","p0=0.3","p0=0.4","p0=0.5","p0=0.6","p0=0.7","p0=0.8","p0=0.9")

> colnames(Sample)<-c("p1=0.1","p1=0.2","p1=0.3","p1=0.4","p1=0.5","p1=0.6","p1=0.7","p1=0.8","p1=0.9")

Level = 1% and Power = 90%

> Sample

p1=0.1 p1=0.2 p1=0.3 p1=0.4 p1=0.5 p1=0.6 p1=0.7 p1=0.8 p1=0.9

p0=0.1 Inf 147 41 20 11 7 5 3 2

p0=0.2 173 Inf 230 61 27 15 9 6 4

p0=0.3 53 249 Inf 287 73 32 17 10 6

p0=0.4 26 68 298 Inf 317 78 33 17 9

p0=0.5 15 31 77 321 Inf 321 77 31 15

p0=0.6 9 17 33 78 317 Inf 298 68 26

p0=0.7 6 10 17 32 73 287 Inf 249 53

p0=0.8 4 6 9 15 27 61 230 Inf 173

p0=0.9 2 3 5 7 11 20 41 147 Inf

> Size<-c(0.01,0.05,0.1)

> Critical<-qnorm(Size)

> Critical

[1] -2.326348 -1.644854 -1.281552

> Power<-c(0.8,0.9,0.95)

> Critical1<-qnorm(1-Power)

> Critical1

[1] -0.8416212 -1.2815516 -1.6448536

> Sample<-matrix(0,nrow=9,ncol=9)

> prop<-seq(0.1,0.9,0.1)

> prop

> 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> for(i in 1:9)

+ {

+ for(j in 1:9)

+ {

+ Sample[i,j] <-round(((Critical[1]\*sqrt(prop[i]\*(1-prop[i]))+Critical1[3]\*sqrt(prop[j]\*(1-prop[j])))/(prop[i]-prop[j]))^2)

+ }

+ }

> rownames(Sample)<-c("p0=0.1","p0=0.2","p0=0.3","p0=0.4","p0=0.5","p0=0.6","p0=0.7","p0=0.8","p0=0.9")

> colnames(Sample)<-c("p1=0.1","p1=0.2","p1=0.3","p1=0.4","p1=0.5","p1=0.6","p1=0.7","p1=0.8","p1=0.9")

Level = 1% and Power = 95%

> Sample

p1=0.1 p1=0.2 p1=0.3 p1=0.4 p1=0.5 p1=0.6 p1=0.7 p1=0.8 p1=0.9

p0=0.1 Inf 184 53 25 14 9 6 4 2

p0=0.2 203 Inf 284 75 34 19 11 7 4

p0=0.3 61 297 Inf 350 89 39 21 12 7

p0=0.4 30 81 359 Inf 385 95 40 20 11

p0=0.5 17 37 92 388 Inf 388 92 37 17

p0=0.6 11 20 40 95 385 Inf 359 81 30

p0=0.7 7 12 21 39 89 350 Inf 297 61

p0=0.8 4 7 11 19 34 75 284 Inf 203

p0=0.9 2 4 6 9 14 25 53 184 Inf

> Size<-c(0.01,0.05,0.1)

> Critical<-qnorm(Size)

> Critical

[1] -2.326348 -1.644854 -1.281552

> Power<-c(0.8,0.9,0.95)

> Critical1<-qnorm(1-Power)

> Critical1

[1] -0.8416212 -1.2815516 -1.6448536

> Sample<-matrix(0,nrow=9,ncol=9)

> prop<-seq(0.1,0.9,0.1)

> prop

[1] 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> for(i in 1:9)

+ {

+ for(j in 1:9)

+ {

+ Sample[i,j] <-round(((Critical[2]\*sqrt(prop[i]\*(1-prop[i]))+Critical1[1]\*sqrt(prop[j]\*(1-prop[j])))/(prop[i]-prop[j]))^2)

+ }

+ }

> rownames(Sample)<-c("p0=0.1","p0=0.2","p0=0.3","p0=0.4","p0=0.5","p0=0.6","p0=0.7","p0=0.8","p0=0.9")

> colnames(Sample)<-c("p1=0.1","p1=0.2","p1=0.3","p1=0.4","p1=0.5","p1=0.6","p1=0.7","p1=0.8","p1=0.9")

Level = 5% and Power = 80%

> Sample

p1=0.1 p1=0.2 p1=0.3 p1=0.4 p1=0.5 p1=0.6 p1=0.7 p1=0.8 p1=0.9

p0=0.1 Inf 69 19 9 5 3 2 1 1

p0=0.2 83 Inf 109 29 13 7 4 3 2

p0=0.3 25 119 Inf 136 34 15 8 5 3

p0=0.4 12 33 142 Inf 150 37 16 8 4

p0=0.5 7 15 36 152 Inf 152 36 15 7

p0=0.6 4 8 16 37 150 Inf 142 33 12

p0=0.7 3 5 8 15 34 136 Inf 119 25

p0=0.8 2 3 4 7 13 29 109 Inf 83

p0=0.9 1 1 2 3 5 9 19 69 Inf

> Size<-c(0.01,0.05,0.1)

> Critical<-qnorm(Size)

> Critical

[1] -2.326348 -1.644854 -1.281552

> Power<-c(0.8,0.9,0.95)

> Critical1<-qnorm(1-Power)

> Critical1

[1] -0.8416212 -1.2815516 -1.6448536

> Sample<-matrix(0,nrow=9,ncol=9)

> prop<-seq(0.1,0.9,0.1)

> prop

> 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> for(i in 1:9)

+ {

+ for(j in 1:9)

+ {

+ Sample[i,j] <-round(((Critical[2]\*sqrt(prop[i]\*(1-prop[i]))+Critical1[2]\*sqrt(prop[j]\*(1-prop[j])))/(prop[i]-prop[j]))^2)

+ }

+ }

> rownames(Sample)<-c("p0=0.1","p0=0.2","p0=0.3","p0=0.4","p0=0.5","p0=0.6","p0=0.7","p0=0.8","p0=0.9")

> colnames(Sample)<-c("p1=0.1","p1=0.2","p1=0.3","p1=0.4","p1=0.5","p1=0.6","p1=0.7","p1=0.8","p1=0.9")

Level = 5% and Power = 90%

> Sample

p1=0.1 p1=0.2 p1=0.3 p1=0.4 p1=0.5 p1=0.6 p1=0.7 p1=0.8 p1=0.9

p0=0.1 Inf 101 29 14 8 5 3 2 1

p0=0.2 109 Inf 155 41 19 10 6 4 2

p0=0.3 32 160 Inf 191 49 21 11 6 4

p0=0.4 16 43 194 Inf 209 51 22 11 6

p0=0.5 9 20 50 210 Inf 210 50 20 9

p0=0.6 6 11 22 51 209 Inf 194 43 16

p0=0.7 4 6 11 21 49 191 Inf 160 32

p0=0.8 2 4 6 10 19 41 155 Inf 109

p0=0.9 1 2 3 5 8 14 29 101 Inf

> Size<-c(0.01,0.05,0.1)

> Critical<-qnorm(Size)

> Critical

[1] -2.326348 -1.644854 -1.281552

> Power<-c(0.8,0.9,0.95)

> Critical1<-qnorm(1-Power)

> Critical1

[1] -0.8416212 -1.2815516 -1.6448536

> Sample<-matrix(0,nrow=9,ncol=9)

> prop<-seq(0.1,0.9,0.1)

> prop

[1] 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> for(i in 1:9)

+ {

+ for(j in 1:9)

+ {

+ Sample[i,j] <-round(((Critical[2]\*sqrt(prop[i]\*(1-prop[i]))+Critical1[3]\*sqrt(prop[j]\*(1-prop[j])))/(prop[i]-prop[j]))^2)

+ }

+ }

> rownames(Sample)<-c("p0=0.1","p0=0.2","p0=0.3","p0=0.4","p0=0.5","p0=0.6","p0=0.7","p0=0.8","p0=0.9")

> colnames(Sample)<-c("p1=0.1","p1=0.2","p1=0.3","p1=0.4","p1=0.5","p1=0.6","p1=0.7","p1=0.8","p1=0.9")

Level = 5% and Power = 95%

> Sample

p1=0.1 p1=0.2 p1=0.3 p1=0.4 p1=0.5 p1=0.6 p1=0.7 p1=0.8 p1=0.9

p0=0.1 Inf 133 39 19 11 7 4 3 2

p0=0.2 133 Inf 199 54 24 13 8 5 3

p0=0.3 39 199 Inf 243 62 27 14 8 4

p0=0.4 19 54 243 Inf 265 65 27 13 7

p0=0.5 11 24 62 265 Inf 265 62 24 11

p0=0.6 7 13 27 65 265 Inf 243 54 19

p0=0.7 4 8 14 27 62 243 Inf 199 39

p0=0.8 3 5 8 13 24 54 199 Inf 133

p0=0.9 2 3 4 7 11 19 39 133 Inf

> Size<-c(0.01,0.05,0.1)

> Critical<-qnorm(Size)

> Critical

[1] -2.326348 -1.644854 -1.281552

> Power<-c(0.8,0.9,0.95)

> Critical1<-qnorm(1-Power)

> Critical1

[1] -0.8416212 -1.2815516 -1.6448536

> Sample<-matrix(0,nrow=9,ncol=9)

> prop<-seq(0.1,0.9,0.1)

> prop

[1] 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> for(i in 1:9)

+ {

+ for(j in 1:9)

+ {

+ Sample[i,j] <-round(((Critical[3]\*sqrt(prop[i]\*(1-prop[i]))+Critical1[1]\*sqrt(prop[j]\*(1-prop[j])))/(prop[i]-prop[j]))^2)

+ }

+ }

> rownames(Sample)<-c("p0=0.1","p0=0.2","p0=0.3","p0=0.4","p0=0.5","p0=0.6","p0=0.7","p0=0.8","p0=0.9")

> colnames(Sample)<-c("p1=0.1","p1=0.2","p1=0.3","p1=0.4","p1=0.5","p1=0.6","p1=0.7","p1=0.8","p1=0.9")

Level = 10% and Power = 80%

> Sample

p1=0.1 p1=0.2 p1=0.3 p1=0.4 p1=0.5 p1=0.6 p1=0.7 p1=0.8 p1=0.9

p0=0.1 Inf 52 15 7 4 3 2 1 1

p0=0.2 59 Inf 81 21 10 5 3 2 1

p0=0.3 18 85 Inf 100 25 11 6 3 2

p0=0.4 9 23 103 Inf 110 27 11 6 3

p0=0.5 5 11 26 111 Inf 111 26 11 5

p0=0.6 3 6 11 27 110 Inf 103 23 9

p0=0.7 2 3 6 11 25 100 Inf 85 18

p0=0.8 1 2 3 5 10 21 81 Inf 59

p0=0.9 1 1 2 3 4 7 15 52 Inf

> Size<-c(0.01,0.05,0.1)

> Critical<-qnorm(Size)

> Critical

[1] -2.326348 -1.644854 -1.281552

> Power<-c(0.8,0.9,0.95)

> Critical1<-qnorm(1-Power)

> Critical1

[1] -0.8416212 -1.2815516 -1.6448536

> Sample<-matrix(0,nrow=9,ncol=9)

> prop<-seq(0.1,0.9,0.1)

> prop

[1] 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> for(i in 1:9)

+ {

+ for(j in 1:9)

+ {

+ Sample[i,j] <-round(((Critical[3]\*sqrt(prop[i]\*(1-prop[i]))+Critical1[2]\*sqrt(prop[j]\*(1-prop[j])))/(prop[i]-prop[j]))^2)

+ }

+ }

> rownames(Sample)<-c("p0=0.1","p0=0.2","p0=0.3","p0=0.4","p0=0.5","p0=0.6","p0=0.7","p0=0.8","p0=0.9")

> colnames(Sample)<-c("p1=0.1","p1=0.2","p1=0.3","p1=0.4","p1=0.5","p1=0.6","p1=0.7","p1=0.8","p1=0.9")

Level = 10% and Power = 90%

> Sample

p1=0.1 p1=0.2 p1=0.3 p1=0.4 p1=0.5 p1=0.6 p1=0.7 p1=0.8 p1=0.9

p0=0.1 Inf 80 24 11 7 4 3 2 1

p0=0.2 80 Inf 121 33 15 8 5 3 2

p0=0.3 24 121 Inf 148 38 16 9 5 3

p0=0.4 11 33 148 Inf 161 39 16 8 4

p0=0.5 7 15 38 161 Inf 161 38 15 7

p0=0.6 4 8 16 39 161 Inf 148 33 11

p0=0.7 3 5 9 16 38 148 Inf 121 24

p0=0.8 2 3 5 8 15 33 121 Inf 80

p0=0.9 1 2 3 4 7 11 24 80 Inf

> Size<-c(0.01,0.05,0.1)

> Critical<-qnorm(Size)

> Critical

[1] -2.326348 -1.644854 -1.281552

> Power<-c(0.8,0.9,0.95)

> Critical1<-qnorm(1-Power)

> Critical1

[1] -0.8416212 -1.2815516 -1.6448536

> Sample<-matrix(0,nrow=9,ncol=9)

> prop<-seq(0.1,0.9,0.1)

> prop

[1] 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

Error: unexpected numeric constant in " 0.1 0.2"

> for(i in 1:9)

+ {

+ for(j in 1:9)

+ {

+ Sample[i,j] <-round(((Critical[3]\*sqrt(prop[i]\*(1-prop[i]))+Critical1[3]\*sqrt(prop[j]\*(1-prop[j])))/(prop[i]-prop[j]))^2)

+ }

+ }

> rownames(Sample)<-c("p0=0.1","p0=0.2","p0=0.3","p0=0.4","p0=0.5","p0=0.6","p0=0.7","p0=0.8","p0=0.9")

> colnames(Sample)<-c("p1=0.1","p1=0.2","p1=0.3","p1=0.4","p1=0.5","p1=0.6","p1=0.7","p1=0.8","p1=0.9")

Level = 10% and Power = 95%

> Sample

p1=0.1 p1=0.2 p1=0.3 p1=0.4 p1=0.5 p1=0.6 p1=0.7 p1=0.8 p1=0.9

p0=0.1 Inf 109 32 16 9 6 4 2 1

p0=0.2 101 Inf 160 43 20 11 6 4 2

p0=0.3 29 155 Inf 194 50 22 11 6 3

p0=0.4 14 41 191 Inf 210 51 21 10 5

p0=0.5 8 19 49 209 Inf 209 49 19 8

p0=0.6 5 10 21 51 210 Inf 191 41 14

p0=0.7 3 6 11 22 50 194 Inf 155 29

p0=0.8 2 4 6 11 20 43 160 Inf 101

p0=0.9 1 2 4 6 9 16 32 109 Inf

**Arcsine Transformation Analysis**

> Size<-c(0.01,0.05,0.1)

> Critical<-qnorm(Size)

> Critical

[1] -2.326348 -1.644854 -1.281552

> Power<-c(0.8,0.9,0.95)

> Critical1<-qnorm(1-Power)

> Critical1

[1] -0.8416212 -1.2815516 -1.6448536

> Sample<-matrix(0,nrow=9,ncol=9)

> Prop<-seq(0.1,0.9,0.1)

> Prop

> 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> for(i in 1:9)

+ {

+ for(j in 1:9)

+ {

+ Sample[i, j] <- round(((Critical[1] + Critical1[1])^2)/(2\*asin(sqrt(Prop[i]))

+ + - 2\*asin(sqrt(Prop[j])))^2)

+ }

+ }

> rownames(Sample)<-c("p0=0.1","p0=0.2","p0=0.3","p0=0.4","p0=0.5","p0=0.6","p0=0.7","p0=0.8","p0=0.9")

> colnames(Sample)<-c("p1=0.1","p1=0.2","p1=0.3","p1=0.4","p1=0.5","p1=0.6","p1=0.7","p1=0.8","p1=0.9")

Level = 1% and Power = 80%

> Sample

p1=0.1 p1=0.2 p1=0.3 p1=0.4 p1=0.5 p1=0.6 p1=0.7 p1=0.8 p1=0.9

p0=0.1 Inf 125 38 19 12 8 6 4 3

p0=0.2 125 Inf 186 51 24 14 9 6 4

p0=0.3 38 186 Inf 227 59 27 15 9 6

p0=0.4 19 51 227 Inf 248 62 27 14 8

p0=0.5 12 24 59 248 Inf 248 59 24 12

p0=0.6 8 14 27 62 248 Inf 227 51 19

p0=0.7 6 9 15 27 59 227 Inf 186 38

p0=0.8 4 6 9 14 24 51 186 Inf 125

p0=0.9 3 4 6 8 12 19 38 125 Inf

> Size<-c(0.01,0.05,0.1)

> Critical<-qnorm(Size)

> Critical

[1] -2.326348 -1.644854 -1.281552

> Power<-c(0.8,0.9,0.95)

> Critical1<-qnorm(1-Power)

> Critical1

[1] -0.8416212 -1.2815516 -1.6448536

> Sample<-matrix(0,nrow=9,ncol=9)

> Prop<-seq(0.1,0.9,0.1)

> Prop

[1] 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> for(i in 1:9)

+ {

+ for(j in 1:9)

+ {

+ Sample[i, j] <- round(((Critical[1] + Critical1[2])^2)/(2\*asin(sqrt(Prop[i]))

+ + - 2\*asin(sqrt(Prop[j])))^2)

+ }

+ }

> rownames(Sample)<-c("p0=0.1","p0=0.2","p0=0.3","p0=0.4","p0=0.5","p0=0.6","p0=0.7","p0=0.8","p0=0.9")

> colnames(Sample)<-c("p1=0.1","p1=0.2","p1=0.3","p1=0.4","p1=0.5","p1=0.6","p1=0.7","p1=0.8","p1=0.9")

Level = 1% and Power = 90%

> Sample

p1=0.1 p1=0.2 p1=0.3 p1=0.4 p1=0.5 p1=0.6 p1=0.7 p1=0.8 p1=0.9

p0=0.1 Inf 162 49 25 15 10 7 5 4

p0=0.2 162 Inf 242 67 31 18 12 8 5

p0=0.3 49 242 Inf 295 77 35 19 12 7

p0=0.4 25 67 295 Inf 321 80 35 18 10

p0=0.5 15 31 77 321 Inf 321 77 31 15

p0=0.6 10 18 35 80 321 Inf 295 67 25

p0=0.7 7 12 19 35 77 295 Inf 242 49

p0=0.8 5 8 12 18 31 67 242 Inf 162

p0=0.9 4 5 7 10 15 25 49 162 Inf

> Size<-c(0.01,0.05,0.1)

> Critical<-qnorm(Size)

> Critical

[1] -2.326348 -1.644854 -1.281552

> Power<-c(0.8,0.9,0.95)

> Critical1<-qnorm(1-Power)

> Critical1

[1] -0.8416212 -1.2815516 -1.6448536

> Sample<-matrix(0,nrow=9,ncol=9)

> Prop<-seq(0.1,0.9,0.1)

> Prop

[1] 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> for(i in 1:9)

+ {

+ for(j in 1:9)

+ {

+ Sample[i, j] <- round(((Critical[1] + Critical1[3])^2)/(2\*asin(sqrt(Prop[i]))

+ + - 2\*asin(sqrt(Prop[j])))^2)

+ }

+ }

> rownames(Sample)<-c("p0=0.1","p0=0.2","p0=0.3","p0=0.4","p0=0.5","p0=0.6","p0=0.7","p0=0.8","p0=0.9")

> colnames(Sample)<-c("p1=0.1","p1=0.2","p1=0.3","p1=0.4","p1=0.5","p1=0.6","p1=0.7","p1=0.8","p1=0.9")

Level = 1% and Power = 95%

> Sample

p1=0.1 p1=0.2 p1=0.3 p1=0.4 p1=0.5 p1=0.6 p1=0.7 p1=0.8 p1=0.9

p0=0.1 Inf 196 59 30 18 12 9 6 5

p0=0.2 196 Inf 293 81 38 22 14 10 6

p0=0.3 59 293 Inf 357 93 42 23 14 9

p0=0.4 30 81 357 Inf 389 97 42 22 12

p0=0.5 18 38 93 389 Inf 389 93 38 18

p0=0.6 12 22 42 97 389 Inf 357 81 30

p0=0.7 9 14 23 42 93 357 Inf 293 59

p0=0.8 6 10 14 22 38 81 293 Inf 196

p0=0.9 5 6 9 12 18 30 59 196 Inf

> Size<-c(0.01,0.05,0.1)

> Critical<-qnorm(Size)

> Critical

[1] -2.326348 -1.644854 -1.281552

> Power<-c(0.8,0.9,0.95)

> Critical1<-qnorm(1-Power)

> Critical1

[1] -0.8416212 -1.2815516 -1.6448536

> Sample<-matrix(0,nrow=9,ncol=9)

> Prop<-seq(0.1,0.9,0.1)

> Prop

[1] 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> for(i in 1:9)

+ {

+ for(j in 1:9)

+ {

+ Sample[i, j] <- round(((Critical[2] + Critical1[1])^2)/(2\*asin(sqrt(Prop[i]))

+ + - 2\*asin(sqrt(Prop[j])))^2)

+ }

+ }

> rownames(Sample)<-c("p0=0.1","p0=0.2","p0=0.3","p0=0.4","p0=0.5","p0=0.6","p0=0.7","p0=0.8","p0=0.9")

> colnames(Sample)<-c("p1=0.1","p1=0.2","p1=0.3","p1=0.4","p1=0.5","p1=0.6","p1=0.7","p1=0.8","p1=0.9")

Level = 5% and Power = 80%

> Sample

p1=0.1 p1=0.2 p1=0.3 p1=0.4 p1=0.5 p1=0.6 p1=0.7 p1=0.8 p1=0.9

p0=0.1 Inf 77 23 12 7 5 3 3 2

p0=0.2 77 Inf 115 32 15 9 6 4 3

p0=0.3 23 115 Inf 140 37 16 9 6 3

p0=0.4 12 32 140 Inf 152 38 16 9 5

p0=0.5 7 15 37 152 Inf 152 37 15 7

p0=0.6 5 9 16 38 152 Inf 140 32 12

p0=0.7 3 6 9 16 37 140 Inf 115 23

p0=0.8 3 4 6 9 15 32 115 Inf 77

p0=0.9 2 3 3 5 7 12 23 77 Inf

> Size<-c(0.01,0.05,0.1)

> Critical<-qnorm(Size)

> Critical

[1] -2.326348 -1.644854 -1.281552

> Power<-c(0.8,0.9,0.95)

> Critical1<-qnorm(1-Power)

> Critical1

[1] -0.8416212 -1.2815516 -1.6448536

> Sample<-matrix(0,nrow=9,ncol=9)

> Prop<-seq(0.1,0.9,0.1)

> Prop

[1] 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> for(i in 1:9)

+ {

+ for(j in 1:9)

+ {

+ Sample[i, j] <- round(((Critical[2] + Critical1[2])^2)/(2\*asin(sqrt(Prop[i]))

+ + - 2\*asin(sqrt(Prop[j])))^2)

+ }

+ }

> rownames(Sample)<-c("p0=0.1","p0=0.2","p0=0.3","p0=0.4","p0=0.5","p0=0.6","p0=0.7","p0=0.8","p0=0.9")

> colnames(Sample)<-c("p1=0.1","p1=0.2","p1=0.3","p1=0.4","p1=0.5","p1=0.6","p1=0.7","p1=0.8","p1=0.9")

Level = 5% and Power = 90%

> Sample

p1=0.1 p1=0.2 p1=0.3 p1=0.4 p1=0.5 p1=0.6 p1=0.7 p1=0.8 p1=0.9

p0=0.1 Inf 106 32 16 10 7 5 3 2

p0=0.2 106 Inf 159 44 21 12 8 5 3

p0=0.3 32 159 Inf 194 51 23 13 8 5

p0=0.4 16 44 194 Inf 211 53 23 12 7

p0=0.5 10 21 51 211 Inf 211 51 21 10

p0=0.6 7 12 23 53 211 Inf 194 44 16

p0=0.7 5 8 13 23 51 194 Inf 159 32

p0=0.8 3 5 8 12 21 44 159 Inf 106

p0=0.9 2 3 5 7 10 16 32 106 Inf

> Size<-c(0.01,0.05,0.1)

> Critical<-qnorm(Size)

> Critical

[1] -2.326348 -1.644854 -1.281552

> Power<-c(0.8,0.9,0.95)

> Critical1<-qnorm(1-Power)

> Critical1

[1] -0.8416212 -1.2815516 -1.6448536

> Sample<-matrix(0,nrow=9,ncol=9)

> Prop<-seq(0.1,0.9,0.1)

> Prop

> 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> for(i in 1:9)

+ {

+ for(j in 1:9)

+ {

+ Sample[i, j] <- round(((Critical[2] + Critical1[3])^2)/(2\*asin(sqrt(Prop[i]))

+ + - 2\*asin(sqrt(Prop[j])))^2)

+ }

+ }

> rownames(Sample)<-c("p0=0.1","p0=0.2","p0=0.3","p0=0.4","p0=0.5","p0=0.6","p0=0.7","p0=0.8","p0=0.9")

> colnames(Sample)<-c("p1=0.1","p1=0.2","p1=0.3","p1=0.4","p1=0.5","p1=0.6","p1=0.7","p1=0.8","p1=0.9")

Level = 5% and Power = 95%

> Sample

p1=0.1 p1=0.2 p1=0.3 p1=0.4 p1=0.5 p1=0.6 p1=0.7 p1=0.8 p1=0.9

p0=0.1 Inf 134 41 21 13 8 6 4 3

p0=0.2 134 Inf 201 55 26 15 10 7 4

p0=0.3 41 201 Inf 245 64 29 16 10 6

p0=0.4 21 55 245 Inf 267 67 29 15 8

p0=0.5 13 26 64 267 Inf 267 64 26 13

p0=0.6 8 15 29 67 267 Inf 245 55 21

p0=0.7 6 10 16 29 64 245 Inf 201 41

p0=0.8 4 7 10 15 26 55 201 Inf 134

p0=0.9 3 4 6 8 13 21 41 134 Inf

> Size<-c(0.01,0.05,0.1)

> Critical<-qnorm(Size)

> Critical

[1] -2.326348 -1.644854 -1.281552

> Power<-c(0.8,0.9,0.95)

> Critical1<-qnorm(1-Power)

> Critical1

[1] -0.8416212 -1.2815516 -1.6448536

> Sample<-matrix(0,nrow=9,ncol=9)

> Prop<-seq(0.1,0.9,0.1)

> Prop

[1] 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> for(i in 1:9)

+ {

+ for(j in 1:9)

+ {

+ Sample[i, j] <- round(((Critical[3] + Critical1[1])^2)/(2\*asin(sqrt(Prop[i]))

+ + - 2\*asin(sqrt(Prop[j])))^2)

+ }

+ }

> rownames(Sample)<-c("p0=0.1","p0=0.2","p0=0.3","p0=0.4","p0=0.5","p0=0.6","p0=0.7","p0=0.8","p0=0.9")

> colnames(Sample)<-c("p1=0.1","p1=0.2","p1=0.3","p1=0.4","p1=0.5","p1=0.6","p1=0.7","p1=0.8","p1=0.9")

Level = 10% and Power = 80%

> Sample

p1=0.1 p1=0.2 p1=0.3 p1=0.4 p1=0.5 p1=0.6 p1=0.7 p1=0.8 p1=0.9

p0=0.1 Inf 56 17 9 5 4 3 2 1

p0=0.2 56 Inf 84 23 11 6 4 3 2

p0=0.3 17 84 Inf 102 27 12 7 4 3

p0=0.4 9 23 102 Inf 111 28 12 6 4

p0=0.5 5 11 27 111 Inf 111 27 11 5

p0=0.6 4 6 12 28 111 Inf 102 23 9

p0=0.7 3 4 7 12 27 102 Inf 84 17

p0=0.8 2 3 4 6 11 23 84 Inf 56

p0=0.9 1 2 3 4 5 9 17 56 Inf

> Size<-c(0.01,0.05,0.1)

> Critical<-qnorm(Size)

> Critical

[1] -2.326348 -1.644854 -1.281552

> Power<-c(0.8,0.9,0.95)

> Critical1<-qnorm(1-Power)

> Critical1

[1] -0.8416212 -1.2815516 -1.6448536

> Sample<-matrix(0,nrow=9,ncol=9)

> Prop<-seq(0.1,0.9,0.1)

> Prop

[1] 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> for(i in 1:9)

+ {

+ for(j in 1:9)

+ {

+ Sample[i, j] <- round(((Critical[3] + Critical1[2])^2)/(2\*asin(sqrt(Prop[i]))

+ + - 2\*asin(sqrt(Prop[j])))^2)

+ }

+ }

> rownames(Sample)<-c("p0=0.1","p0=0.2","p0=0.3","p0=0.4","p0=0.5","p0=0.6","p0=0.7","p0=0.8","p0=0.9")

> colnames(Sample)<-c("p1=0.1","p1=0.2","p1=0.3","p1=0.4","p1=0.5","p1=0.6","p1=0.7","p1=0.8","p1=0.9")

Level = 10% and Power = 90%

> Sample

p1=0.1 p1=0.2 p1=0.3 p1=0.4 p1=0.5 p1=0.6 p1=0.7 p1=0.8 p1=0.9

p0=0.1 Inf 82 25 12 8 5 4 3 2

p0=0.2 82 Inf 122 34 16 9 6 4 3

p0=0.3 25 122 Inf 149 39 17 10 6 4

p0=0.4 12 34 149 Inf 162 41 17 9 5

p0=0.5 8 16 39 162 Inf 162 39 16 8

p0=0.6 5 9 17 41 162 Inf 149 34 12

p0=0.7 4 6 10 17 39 149 Inf 122 25

p0=0.8 3 4 6 9 16 34 122 Inf 82

p0=0.9 2 3 4 5 8 12 25 82 Inf

> Size<-c(0.01,0.05,0.1)

> Critical<-qnorm(Size)

> Critical

[1] -2.326348 -1.644854 -1.281552

> Power<-c(0.8,0.9,0.95)

> Critical1<-qnorm(1-Power)

> Critical1

[1] -0.8416212 -1.2815516 -1.6448536

> Sample<-matrix(0,nrow=9,ncol=9)

> Prop<-seq(0.1,0.9,0.1)

> Prop

[1] 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

> for(i in 1:9)

+ {

+ for(j in 1:9)

+ {

+ Sample[i, j] <- round(((Critical[3] + Critical1[3])^2)/(2\*asin(sqrt(Prop[i]))

+ + - 2\*asin(sqrt(Prop[j])))^2)

+ }

+ }

> rownames(Sample)<-c("p0=0.1","p0=0.2","p0=0.3","p0=0.4","p0=0.5","p0=0.6","p0=0.7","p0=0.8","p0=0.9")

> colnames(Sample)<-c("p1=0.1","p1=0.2","p1=0.3","p1=0.4","p1=0.5","p1=0.6","p1=0.7","p1=0.8","p1=0.9")

Level = 10% and Power = 95%

> Sample

p1=0.1 p1=0.2 p1=0.3 p1=0.4 p1=0.5 p1=0.6 p1=0.7 p1=0.8 p1=0.9

p0=0.1 Inf 106 32 16 10 7 5 3 2

p0=0.2 106 Inf 159 44 21 12 8 5 3

p0=0.3 32 159 Inf 194 51 23 13 8 5

p0=0.4 16 44 194 Inf 211 53 23 12 7

p0=0.5 10 21 51 211 Inf 211 51 21 10

p0=0.6 7 12 23 53 211 Inf 194 44 16

p0=0.7 5 8 13 23 51 194 Inf 159 32

p0=0.8 3 5 8 12 21 44 159 Inf 106

p0=0.9 2 3 5 7 10 16 32 106 Inf