

# R source code for homework problem 2.1, part c # Computer experiment to verify what was shown in part a;

```
# setting up the size of the histogram display; rows<-3; columns<-3;
par(mfrow=c(rows,columns));
iterations<-rows*columns-1;
# dimension = number of random draws from the arcsine distn; dimension <- 10000;
# The arcsine distn is beta(0.5,0.5);
x<-rbeta(dimension,0.5,0.5);
# histogram to approximate the arcsine density; hist(x,main="arcsine",freq=F,
col="green", breaks=20); # repeatedly transforming the rv, and looking at the resulting
histograms; for (i in 1:iterations) {

y<-1-x;
hist(y,main="arcsine",freq=F, col="red", breaks=20); x<-y;
}
```

# R source code for homework problem 2.1, part c; # Computer experiment to verify what was shown in part b;

```
# setting up the size of the histogram display; rows<-3; columns<-3;
par(mfrow=c(rows,columns));
iterations<-rows*columns-1;
# dimension = number of random draws from the U[0,1] distn; dimension <- 10000;
u<-runif(dimension);
# histogram to approximate the U[0,1] density; hist(u,main="uniform",freq=F,
col="green", breaks=20); # repeatedly transforming the rv, and looking at the resulting
histograms; for (i in 1:iterations) {

test<- 0.5;
ind<-(u>test);
d<-2*abs(u-ind);
hist(d,main="uniform",freq=F, col="red", breaks=20); u<-d;
}
```