Card Games

Simulate a deck of cards in R, find the probability of drawing an Ace off the top of a shuffled deck. This probability is obviously $4/52 = 1/13$.

```
## Create the deck of 52 cards
## Each row of the deck matrix is one card in the deck
deck <- array(0, c(52,2) )

## The first column of the deck matrix is the cards number
deck[,1]=c("Ace",2,3,4,5,6,7,8,9,10, "Jack", "Queen","King")

## The second column of the deck matrix is the cards suit
deck[,2]=c("Clubs", "Diamonds", "Hearts", "Spades")

## We now have our deck as a matrix
## So the third card in our deck is
## deck[3,], etc.

## Compute the prob of drawing an Ace off
## the top of the deck
reps <- 1e6
gotIt <- 0
for (r in 1:reps )
{
  ## shuffle the deck
  deck <- deck[sample(52),]

  ## Add one to our counter if we draw an
  ## Ace off of the top of the deck
  gotIt <- gotIt+1*(deck[1,1] == "Ace" )
}
prb <- gotIt/reps
print(prb)
```