|  |
| --- |
| #total try  numTotalTrials = 10000  #each cases  count = 0  count2 =0  count3 = 0  for (j in seq(from= 1, to = numTotalTrials, by=1))  {  h= sample(c(-1,1), size=50, replace=TRUE)  if(sum(h) == 0)  {  count = count+1  }    count2[j] = sum(h == 1)  # lead = (median(numTotalTrials))  cum.h= cumsum(h)  #maximum fortune (best fortune)  count3[j] = max(cum.h)  }  #plot  plot(h, type = "l", ylim = c(-1,1))  #probability of breaking even.  print(count/numTotalTrials)  #Peter will be in the lead if he win higher than 25 times in a 50-toss game  print(sum(count2>25) /numTotalTrials)  #average => mean  print(mean(count3)) |

**Problem 1**

**What is the probability that Peter will break**

**even after 50 tosses?**

**The probability that Peter will break even after 50 tosses is about 0.11**

**Problem 2**

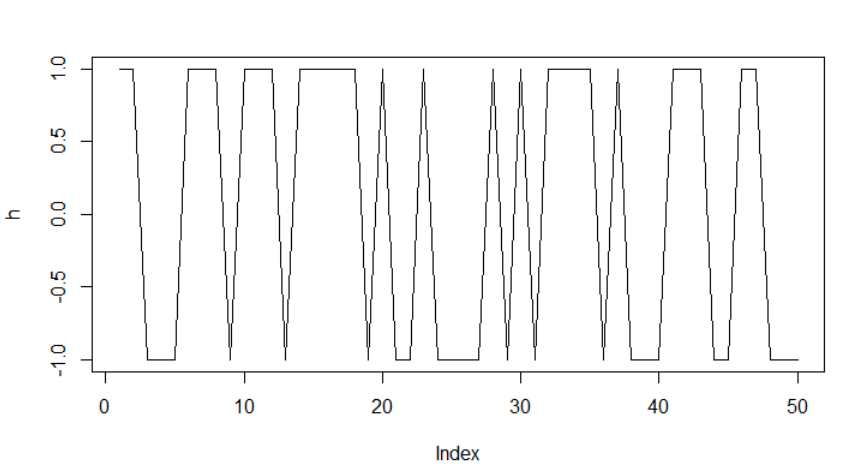
**On average, in a 50 toss game, for what fraction of the time will Peter be in the lead?**

**On average, the fraction of the time that Peter will be in the lead is about 0.45**

**Problem 3**

**On average, what will Peter’s best fortune be during a 50 toss game?**

**On average, Peter’s best fortune will be about 5.07 during a 50 toss game.**

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