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| MATH 1350 | **Statistics for Information Technology** |  |

**Lab # 4 – More Probability**

Answer/Grading Sheet

| **Step:** | **Answer (if requested)** | **Mark** |  |
| --- | --- | --- | --- |
| 7 | * Modifications of the Lab 3 script to perform the Monty Hall experiment |  | /5 |
| 8 | * Edit for loop and if statements to match the code snippet |  | /2 |
| 10 | * Frequency histogram of 50 runs of the Monty Hall code (with requested features) – paste it here      * Which class from your frequency histogram is the mode of the frequency distribution?   breaks=seq(620,720,10) |  | /5  /1 |
| 11 | * Mean number of wins per 1000 games: (paste it here)   [1] 667.36 |  | /1 |
| 12 | * Estimate of the probability of winning the Monty Hall game if we switch doors: (answer here)   0.6667 change of winning the game. |  | /2 |
| R script  Paste your R script here. Make sure that it contains ALL of the elements worth points listed above.  *# Lab 4*  *# Markus Afonso*  library(mosaic)  doordata <- read.delim("C:/Users/Markus/OneDrive - BCIT/Desktop/Term2/MATH 1350 Statistics for IT/Week4/doordata.txt", comment.char="#")  h <- 1:50  nums <- list()  for (x in h){  n <- 1:1000  winning\_door <- sample(c(1,2,3), length(n),replace=TRUE)  first\_pick <- sample(c(1,2,3), length(n),replace=TRUE)  win\_counter <- 0  loss\_counter <- 0  for (i in n) {    if (winning\_door[i]== first\_pick[i]) {      loss\_counter <- loss\_counter+1    }    else {      win\_counter <- win\_counter +1    }  }  nums <- append(nums, list(win\_counter))  }  nums <- unlist(nums, use.names = FALSE)  histogram(nums, main = "Chances of Picking Door",            xlab = "Scores", ylab = "Percentage of Scores", type = "p",            col="grey", breaks=seq(620,720,10))  mean(nums) | | | |
|  | Paper and Pencil problem #1 (this is just a space for your marks) |  | /3 |
|  | Paper and Pencil problem #2 |  | /4 |
|  | Paper and Pencil problem #3 |  | /6 |
|  | Paper and Pencil problem #4 |  | /3 |

Total /32