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

**Lab # 5 – Binomial and Poisson Distributions**

Answer/Grading Sheet

| **Step:** | **Answer (if requested)** | **Mark** |  |
| --- | --- | --- | --- |
| 6 | a)  > dbinom(94,1000,0.094)  [1] 0.043191  b)  > 1 - pbinom(81,1000,0.094)  [1] 0.9143385  c)  > pbinom(65,1000,0.094)  [1] 0.0006092706  d)  > pbinom(99,1000,0.094)  [1] 0.7275475  e)  > 1 - pbinom(74,1000,0.094)  [1] 0.9849876  f)  > pbinom(19,1000,0.094)  [1] 2.295188e-22  g)  > pbinom(90,1000,0.094) - pbinom(50,1000,0.094)  [1] 0.3569564  h)  > dbinom(32,1000,0.094)  [1] 1.005326e-14  i)  µ= *np*  µ= (1000)(0.094)  µ= 94  j) |  | /10 |
| 7 | #7 using u = np = lamda  p <- 1.1/10000  a)  > dpois(2,p\*200)  [1] 0. 01942095  b)  > dpois(1,p\*500) + (dpois(2,p\*500) - dpois(2,p\*1000))  [1] 0. 203199  c)  > ppois(10,p\*5000) - ppois(4,p\*5000)  [1] 0. 6172307 |  | /3 |
| 8 | a)  a = probability  a <- 0.4/60  > dpois(2, a\*60)  [1] 0.0536256  b)  > ppois(3, a\*300)  [1] 0.8571235  c)  > 1 - ppois(3, a\*120)  [1] 0. 0474226 |  | /3 |
| R script  Paste your R script here. Make sure that it contains ALL of the elements worth points listed above.  # Lab 5  # Markus Afonso  library(mosaic)  # 6 a  dbinom(94,1000,0.094)  #b  1 - pbinom(81,1000,0.094)  #c  pbinom(65,1000,0.094)  #d  pbinom(99,1000,0.094)  #e  1 - pbinom(74,1000,0.094)  #f  pbinom(19,1000,0.094)  #g  pbinom(90,1000,0.094) - pbinom(50,1000,0.094)  #h  dbinom(32,1000,0.094)  #7 using u = np = lamda  p <- 1.1/1000  #a  dpois(2,p\*200)  #b  dpois(1,p\*500) + (dpois(2,p\*500) - dpois(2,p\*1000))  #c  ppois(10,p\*5000) - ppois(4,p\*5000)  #8  a <- 0.4/60  dpois(2, a\*60)  ppois(3, a\*300)  1 - ppois(2, a\*120) | | | |
|  | Paper and Pencil problem #1 (this is just a space for your marks) |  | /2 |
|  | Paper and Pencil problem #2 |  | /3 |
|  | Paper and Pencil problem #3 |  | /3 |

Total /24