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

**Lab # 6 – Continuous Probability Distributions**

Answer/Grading Sheet

| **Question:** | **Answer** | **Mark** |  |
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| 1 | a)  > pnorm(2.52)  [1] 0.9941323  b)  > pnorm(2.14) - pnorm(-1.06)  [1] 0.8392503  c)  > pnorm(-0.72)  [1] 0.2357625  d)  > 1 - pnorm(-2.03)  [1] 0.9788217 |  | /4 |
| 2 | a)  > pnorm(90,97.27,10.84)  [1] 0.2512172  b)  > pnorm(120,97.27,10.84) - pnorm(100,97.27,10.84)  [1] 0.3825776  c) = 0  d)  > 1 - pnorm(95,97.27,10.84)  [1] 0.5829357 |  | /4 |
| 3 | a) 0.06731862 <= pnorm(x,44.9, 1.27) <= 0.9926756  b)  > (1 - (pnorm(48,44.9, 1.27) - pnorm(43,44.9, 1.27))) \* 100  [1] 7.464307% |  | /2  /2 |
| 4 | > qnorm(.02, 5570, 237)  [1] 5083.262  About 5000 of the first pages should be under warranty |  | /4 |
| 5 | a)  > sqrt(sqrt(o1)+ sqrt(o2))  [1] 2.440742  b)  > o12 <- sqrt(sqrt(o1)+ sqrt(o2))  > 1- pnorm(120, (u1 +u2), o12)  [1] 0.07347648 |  | /2  /2 |
| 6 | a)  > pnorm(log(115)/log(2.7182818284590452353602874713527), 5.168, 1.23)  [1] 0.3654391  b)  > 1 - pnorm(log(180,2.7182818284590452353602874713527), 5.168, 1.23)  [1] 0.491906 |  | /2  /2 |
| R script /6  Paste your R script here. It should contain all the commands you used to find the probabilities in the questions 1-6 above.  # lab 6  # markus afonso  library(mosaic)  #1  pnorm(2.52)  pnorm(2.14) - pnorm(-1.06)  pnorm(-0.72)  1 - pnorm(-2.03)  #2  pnorm(90,97.27,10.84)  pnorm(120,97.27,10.84) - pnorm(100,97.27,10.84)  1 - pnorm(95,97.27,10.84)  #3  pnorm(x,44.9, 1.27)  pnorm(x,44.9, 1.27)  (qnorm(pnorm(48,44.9, 1.27),44.9, 1.27) + qnorm(pnorm(43,44.9, 1.27),44.9, 1.27))  (1 - (pnorm(48,44.9, 1.27) - pnorm(43,44.9, 1.27))) \* 100  #4  qnorm(.02, 5570, 237)  #5  qnorm(.99,65.24, 7.42)  pnorm(60,51.22, 10.67)  u1 <-65.24  o1 <-7.24  u2 <-51.22  o2 <-10.67  #Question 5  #a  sqrt(sqrt(o1)+ sqrt(o2))  o12 <- sqrt(sqrt(o1)+ sqrt(o2))  1- pnorm(120, (u1 +u2), o12)  #b  pnorm(100, (bat1\_mean +bat2\_mean), comb\_sd)  #6  pnorm(5.168, 5.168, 1.23)  pnorm(log(115)/log(2.7182818284590452353602874713527), 5.168, 1.23)  1 - pnorm(log(180,2.7182818284590452353602874713527), 5.168, 1.23) | | | |

Total /30