

Name _____

Student Number _____

STA 312 f2023 Quiz 2

1. (5 points) Let X_1, \dots, X_n be a random sample from a geometric distribution; see formula sheet. Find the maximum likelihood estimate of θ . Show your work and **circle your final answer**. *You do not need to bother with the second derivative test.*

2. For Question 9 of Assignment 2, you analyzed numerical data from a distribution with density $f(x|\pi) = \pi e^{-\pi/x} \frac{1}{x^2}$ for $x > 0$, where the parameter $\pi > 0$.

(a) (2 points) In the space below, write $\hat{\pi}$, the maximum likelihood estimate of π . The answer is a number from your printout. On your printout, circle the number and write “Question 2a” beside it.

(b) (3 points) You found a 95% confidence interval for π . In the space below, write the lower and upper confidence limits. The answer is a pair of numbers from your printout. On your printout, circle the numbers and write “Question 2b” beside them.

Please attach the printout with your answers to Question 2 of this quiz (Question 9 of the assignment). Make sure your name and student number are written on the printout.