Memo Date: . .

PART 2

(Q2) What is the lambda MLE of the generated data

$$F(x) = \frac{1}{\lambda} \exp\left(\frac{-x}{\lambda}\right)$$

let x be a single observed sample, f the likelihood function for exponential distribution random variable with parameter λ. maximising the log-likelihood

$$e(\lambda) := \log(F(x)) = -\log\lambda - x/\lambda$$

$$e'(\lambda) = 0 = 0 = \frac{-1}{\lambda} + \frac{x}{\lambda^2} = \lambda = x$$

$\therefore x$ is the mean of sample data