MATH10282: INTRODUCTION TO STATISTICS
SEMESTER 2
QUIZ PROBLEM 7
(Deadline: Friday 1 April 2022, 11:00am)

Suppose X_i distributed as N $\left(0, i\sigma^2\right)$, $i = 1, \ldots, n$ are independent random variables. The maximum likelihood estimator of σ^2 is

a) $\displaystyle \frac{1}{n}\sum_{i=1}^{n}\frac{x_i^2}{i}$.

b) $\displaystyle \frac{1}{n}\sum_{i=1}^{n}x_i^2$.

c) $\displaystyle \frac{1}{n}\sum_{i=1}^{n}\frac{x_i}{i}$.

d) $\displaystyle \frac{1}{n}\sum_{i=1}^{n}x_i$.

This problem is worth 1 mark. Marking scheme: 1 mark if the answer is correct, 0 mark if the answer is incorrect.

Please use Blackboard to enter your answer.