

**MATH10282: INTRODUCTION TO STATISTICS**  
**SEMESTER 2**

**QUIZ PROBLEM 6**

(Deadline: Thursday 25 March 2021, 10:00am)

Suppose  $X_1, \dots, X_n$  is a random sample from  $\text{Uniform}[a, 1]$ . Suppose  $\hat{a} = \min(X_1, \dots, X_n)$  is an estimator of  $a$ . The mean squared error of  $\hat{a}$  is

a)  $\text{MSE} = \frac{(1-a)^2}{(n+1)^2(n+2)}.$

b)  $\text{MSE} = \frac{2(1-a)^2}{(n+1)^2(n+2)}.$

c)  $\text{MSE} = \frac{(1-a)^2}{(n+1)(n+2)}.$

d)  $\text{MSE} = \frac{2(1-a)^2}{(n+1)(n+2)}.$

**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.**