

**MATH10282: INTRODUCTION TO STATISTICS**  
**SEMESTER 2**  
**QUIZ PROBLEM 5**  
(Deadline: Friday 18 March 2022, 11:00am)

Suppose  $X_1, \dots, X_n$  is a random sample from Uniform $[0, a]$ . Suppose  $\hat{a} = \max(X_1, \dots, X_n)$  is an estimator of  $a$ . The bias of  $\hat{a}$  is

a) bias =  $\frac{a}{n+1}$ .

b) bias =  $-\frac{a}{n+1}$ .

c) bias =  $-\frac{a}{n}$ .

d) bias =  $\frac{a}{n}$ .

**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.**