

Name:

Quiz 3 – 11 September 2019

Instructions. You have 10 minutes to complete this quiz. You may use your calculator. You may not use any other materials (e.g., notes, homework, books).

Problem	Weight	Score
1	2	
2	2	
3	1	
Total		/ 50

Consider the random variable X with cdf

$$F_X(a) = \begin{cases} 0 & \text{if } a < 0 \\ \frac{a}{4} & \text{if } 0 \leq a \leq 4 \\ 1 & \text{if } a > 4 \end{cases}$$

Problem 1. Construct a random variate generator for X . Your solution should be in the form: “ $X = \dots$ where $U \sim \text{Uniform}[0,1]$.”

Problem 2. Suppose you have access to a function `random()` that generates random variates of $\text{Uniform}[0,1]$. Briefly describe how you would use your random variate generator in Problem 1 to generate random variates of X .

Problem 3. Using your answer to Problem 2, what value is generated if `random()` returns the value 0.1?