Exercise 1	Calc. : 🗡
Une variable aléatoire continue X a une fonction de densité f donnée par :	
$f(x) = \begin{cases} 0 & \text{si } x < 0\\ a \cdot e^{-ax} & \text{si } x > 0 \end{cases}$	
On sait que : $P(X < 1) = \frac{1}{2}$.	
Montrer que $a = \ln 2$.	5 marks
Exercise 2	Calc. : 🗡
An electronic device makes it possible to obtain randomly in whole natural x included, in the	
broad sense, between 1 and 999 (we are therefore in a situation of equiprobability). Any number	
between 10 and 99 is written with two digits and any number between 1 and 9 is written with	
a single digit ; thus the number sixty-two will be displayed 62 and not 062, likewise the number seven will be written 7 and not 007.	
1. Show that the probability of getting a multiple of 5 is $\frac{199}{999}$.	3 marks
2. Calculate the probability that the same number appears at least twice times in writing x .	3 marks

3.	In this question we will round the probability of obtaining a multiple from 5 to 0.2 .	
	5 numbers are successively determined using this device.	
	Calculate the probability that, among these five numbers, three exactly be multiples of five.	3 marks
4.	We model the choice of a real number x in the interval [1; 999] by a random variable following the density law defined by the function $f(x) = \frac{1}{998}$.	
	(a) What is the probability of rolling a multiple of 5?	$1 \mathrm{mark}$
	(b) What is the probability of getting a real less than or equal to 500?	3 marks