Exercise 1 Calc. : ✗

Une suite arithmétique strictement croissante (a_n) et une suite géométrique (b_n) ont le même premier terme $a_1 = b_1 = 2$.
De plus, les deux suites (a_n) et (b_n) ont le même troisième terme $a_3 = b_3$.
La somme des trois premiers termes de la suite arithmétique est supérieure de 4 à la somme des trois premiers termes de la suite géométrique.

7 marks **Trouver** l'expression du n-ième terme de chacune des suites (a_n) et de (b_n).

Exercise 2 Calc. : ✗

The Corbett Nation Park reserve in India is a natural reserve where we can see tigers.

1. This reserve is home to 8 tigers, five of which are marked.

2 marks We capture three tigers, what is the probability that two of them be marked?

Give the result as an irreducible fraction.

2. A group of 8 tourists arrives on the site for a safari.

2 marks Four of these tourists must get into the first car, that has four different places. How many different ways can they fit in the car?

3. We know that 40% of visitors to Corbett Nation Park are European.

Among Europeans, 10% see a tiger.

We also know that 20% of visitors to this reserve see a tiger.

2 marks We come across a non-European visitor at random. Calculate the probability that he saw a tiger.

4. Every day, the probability that a tourist sees a tiger is of 0.2.

2 marks (a) Calculate the probability that a tourist sees a tiger for the first time on the third day of his visit.

2 marks (b) We note $P(X = n) = p_n$ the probability that a tourist sees a tiger for the first time on the n-th day of his visit. Show that the sequence (p) is a geometric sequence of which we will specify the first term and reason.

3 marks (c) Show that $P(X \leq n) = 1 - 0,8^n$. Interpret this result in this context.