Bayesian updating exercise

Problem :

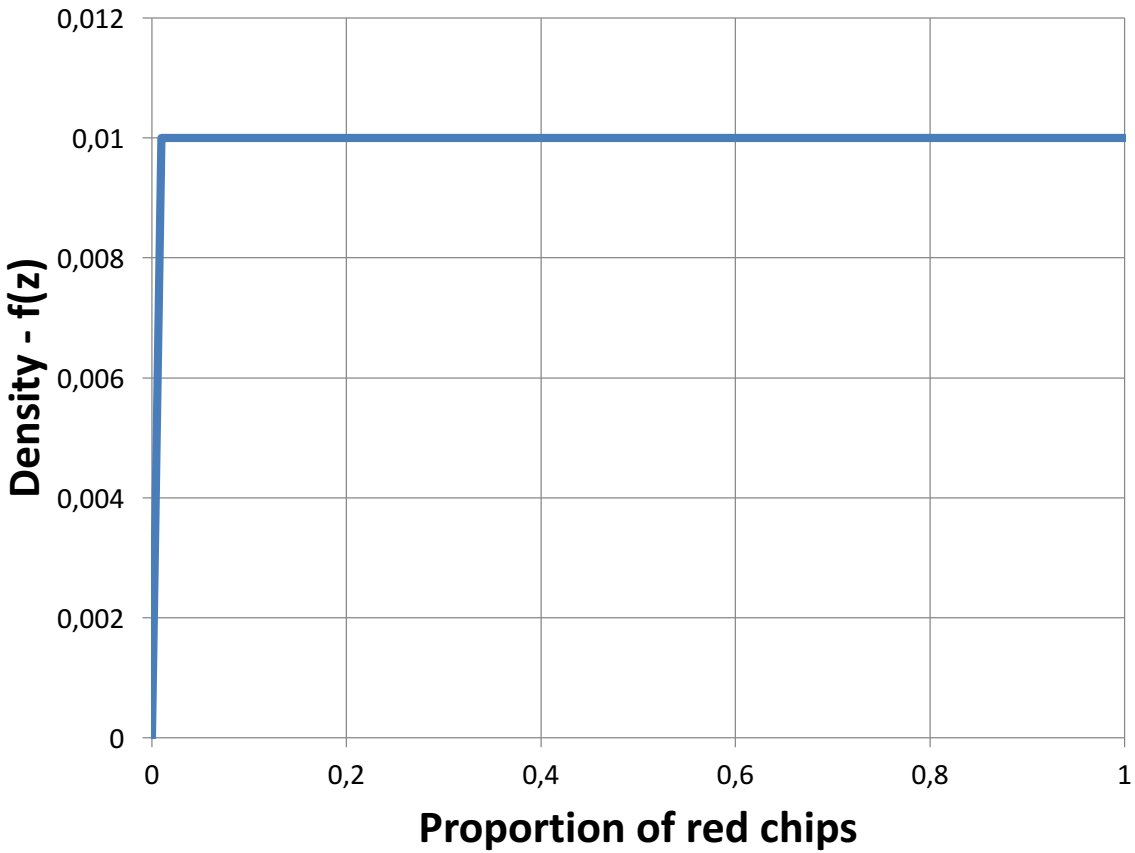
- A bag contains poker chips : only red or white.
- Of the last 10 last chips randomly drawn (with replacement) from the bag, 3 were red.
- What is your a posteriori belief of the probability that the next chip drawn from the bag is red ?

Bayesian solution :

- The event of interest is the color of a chip drawn from the bag being red.
- Characterize the probability of this event by p
- Characterize your prior belief of p using a Beta distribution. (initially use $\alpha = 1$ and $\beta = 1$ for the uniform distribution $[0, 1]$)
- After observing 10 draws from which 3 were red, the a posteriori belief of p is Beta with $\alpha = 1 + 3$ and $\beta = 1 + 7$

Bayesian updating exercise II

Prior belief of p (see Excel file)



Bayesian updating exercise III

A posteriori belief of p (see Excel file)