<https://onlinecourses.science.psu.edu/stat414/node/26>

**relative Frequency and probability**

 N is the size of the sample for Nu ; here, .N=10

The  Nu values you observe are from a single experiment. Problem 1 asks you to average Nu\_min over all experiments. Problem 2 asks about the probability distribution (relative frequencies) of  Nu values over all experiments.

Since  in my case is discrete,  needs to be discrete, too.

This is not true, strictly speaking, but for the purposes of this problem, you only need to check it at increments of 0.1 because there are only N=10 coin flips.

Because mue=0.5  here, it suffices to consider 0<eps/,0.5 . Do you see why?

Also, because N is 10, it suffices to choose  eps values in increments of 0.1 , although you may want to use a finer scale if you are going to plot the right hand side of the inequality.

\*\*\*\*

@pontos\_greek: I am not quite sure what you mean by your notation. The Hoeffding inequality is

P[|μ−ν|>ϵ]≤2e−2ϵ2N

The parameters here are

* μ=1/2
* N=10

and you use the three different ν values (relative frequencies) from your experiments. The right hand side is just a function of ϵ, which you can (optionally) plot immediately.

The reason for running the experiment 100,000 times is to use the relative frequency of the event |μ−ν|>ϵ to estimate the probability on the left hand side (which will also vary with ϵ).

I hope this makes sense.