EXERCISE 1: PRACTICAL CASE

a) Create the input data:

> randn('seed',0);
>
> A=round(20+randn(1,500)*5); %Golden.
>
> B=round(30+randn(1,500)*2); %Bass.

b) Obtain the histograms A and B with intervals size equal to 1

c) Obtain the A and B probabilities for each interval

d) Which is the error we get in the following sentences?

- If a fish length is less than or equal to 24, it is golden fish, else, it is bass.
- If a fish length is less than or equal to 25, it is golden fish, else, it is bass.
- If a fish length is less than or equal to 26, it is golden fish, else, it is bass.
- If a fish length is less than or equal to 27, it is golden fish, else, it is bass.
- If a fish length is less than or equal to 28, it is golden fish, else, it is bass.

e) Perform the previous steps, assuming that you generate input data for 500 gold and 50 bass. What happened with the minimum error point? And, if you generate input data for 50 gold and 500 bass?

f) State a procedure for, given A and B, find the optimal point of decision N:

- If a fish length is less than or equal to N, it is golden fish, else, it is bass.