Recall the Bernoulli RV problem discussed in class. Specifically, the probability of passing a difficult class at Penn is 0.95 and the probability of failing it is 0.05. Here, the parameter is *α*, which is the probability of success (i.e., probability of passing), and the value of *α* is 0.95.

Recall that the PMF of the Bernoulli RV (that we call X) can be written as

Where α = probability of passing.

Because in our example α = 0.95, we can rewrite the above PMF as follows:

We’ve seen that and . So, in this problem and .

Let’s now derive this using the general definitions of and for discrete random variables.

Recall that .

In our case, .

Also recall that

In our case, *V*