

For a random student,

The probability of failing in 0 subjects, $P(X=0) = 0.8$

The probability of failing in 1 subjects, $P(X=1) = 0.1$

The probability of failing in 2 subjects, $P(X=2) = 0.07$

The probability of failing in 3 subjects, $P(X=3) = 0.03$

The probability distribution can be shown as:

X	0	1	2	3
P(X)	0.8	0.1	0.07	0.03