Assignment 4.3

In a class of 100 students, 80 students passed in all subjects, 10 failed in one subject, 7 failed in two and 3 failed in three subjects. Find the probability distribution of the variable for number of subjects a student from the given class has failed in.

For a random student,

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

The probability of failing in 1 subject, $P(x=1) = \frac{10}{100} = 0.1$

" " failing in 2 subjects, $P(x=2) = 0.07 \left(\frac{7}{100}\right)$

The probability of failing in 3 subjects $P(x=3) = 0.03 \left(\frac{3}{100}\right)$

The probability distribution can be shown as

x	0	1	2	3
$P(x)$	0.8	0.1	0.07	0.03