Math 3339   Name:

Quiz #3

Please, write clearly and justify all your steps, to get proper credit for your work.

(1) [4Pts] Suppose that the probability density function $f(x)$ of the length X of an international phone call, rounded up to the next minute, is given by:

x	1	2	3	4
$f(x)$	0.3	0.5	0.1	0.1

Calculate the mean and the variance.

(2) [2Pts] A job applicant to a company is required to submit one, two, three, four, or five forms depending on the nature of the job. Let X to denote the number of forms required of an applicant. The probability that x forms are required is known to be proportional to x, that is,

$$p(x) = k\,x, \text{ for } x = 1, 2, 3.$$

Calculate the value k so that $p(x)$ is a probability mass function.