

HW #4

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

(1)[8 Pts] 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
$f(x)$	0.2	0.5	0.2	0.1

- (a) Calculate $P(X \leq 2)$, $P(X < 2)$, and $P(X \geq 1)$.
- (b) Plot the cumulative distribution function $F(x)$.
- (c) Calculate the mean $\mu = E(X)$.
- (d) Calculate $E(X^2)$ and use it to compute the variance σ^2 .

(2)[6 Pts] Exercise 12, in Ch.3 (p.104).

(3)[6 Pts] Exercise 14, parts (a)-(c), in Ch.3 (p.105).