

EE 325 (2/2012) Practice 1

1. Find the answers following questions

a. $\sum_{i=1}^8 (a + bx_i)$

b. $\sum_{y=0}^7 f(x-y)$

c. $\sum_{i=1}^5 i^3$

d. $\sum_{x=1}^2 \sum_{y=2}^3 (3x + y)$

2. Given X is discrete random variable. The probability distribution function (PDF) of this variable is shown in the table

X	-2	-1	0	1	2	3	4
$f(x)$	0.25c	c	0.25c	0.5c	0.5c	2c	0.5c

when b is constant number

- Find the value of b
- Find the answer for $P(X \leq 2)$
- Find the answer for $P(-2 \leq X \leq 3)$
- Find the answer for $P(X \geq 1)$

3. Given X is continuous random variable. The probability distribution function (PDF) of this variable is

$$f(x) = -\frac{1}{9}x + \frac{6}{9}, 0 \leq x \leq 3$$

- Plot graph for $f(x)$
- Find the answer for $P(2 \leq X \leq 3)$
- Find the answer for $P(X \geq 1)$
- Find the expected value of X

4. Let random variable X be the outcome of throwing one dice and random variable Y be the outcome of tossing one coin. Coin has two sided that has valued 1 and 0.
- a. Construct the joint probability distribution function (PDF) table of X and Y
 - b. Find the marginal probability distribution function (PDF) of X
 - c. Find the marginal probability distribution function (PDF) of Y
 - d. Find the conditional probability distribution function (PDF) of X given Y is equal to 1
 - e. Find the expected value of X given Y is equal to 1
 - f. Find the variance of X given Y is equal to 1
5. Question 1.1, 1.2 and 1.3 from textbook (Basic Econometrics 5th edition)