20.04.2020

STA 250: PROBABILITY and STATISTICS

MIDTERM EXAM

Question 1: Flip a coin three times.

a. Define two events: A and B
b. Are they independent / exclusive?
c. Define a conditional proability and calculate this probability.

Question 2: Flip the three coins at the same time.

a.Define two events: A and B

b.Are they independent / exclusive?

c.Define a conditional proability and calculate this probability.

Question 3: Flip the two dices at the same time.

a.Define two events: A and B

b. Are they independent / exclusive?

c.Define a conditional proability and calculate this probability.

Question 4: Flip a dice two times.

d. Define two events: A and B
e. Are they independent / exclusive?
f. Define a conditional proability and calculate this probability.

Question 5: For X discrete random variable has $f_X(x)$ probability function with c

a. Define $f(x) = c$ .... $D_X = \{... ...\}$ tanımlayınız.
b. Obtain c constant.
c. Calculate the $E(X), Var(X)$ values.
d. Define 5 probabilities and calculate them.

Question 6: For X continuous random variable has $f_X(x)$ probability density function with c

e. Define $f(x) = c$ .... $D_X = (.,.)$
f. Obtain c constant.
g. Calculate the $E(X), Var(X)$ values.
h. Define 5 probabilities and calculate them.

Question 7:

Define a **Bernoulli Experiment** and obtain the proability function.

Question 8:

Define a **Binomial Experiment.**

a. Define X: "……..." like that
b. Obtain the pdf
c. Calculate the $E(X), Var(X)$ values.
d. Define 5 probabilities and calculate them.

Question 9:

Define an experiment for **Geometric Random Variable.**

a.Define X: "……..." like that

b. Obtain the pdf

c.Calculate the $E(X), Var(X)$ values.

d.Define 5 probabilities and calculate them.

Question 10:

Define an experiment for **Poisson Random Variable.**

a..Define X: "……..." like that

b. Obtain the pdf

c.Calculate the $E(X), Var(X)$ values.

d.Define 5 probabilities and calculate them.