Q1. A computer serial number constructed from two English letters followed by three digits (duplicate is allowed), calculate the below:

   a. How many serial numbers can be constructed.
   b. How many serial numbers can be constructed if the serial number must start with the letter F.
   c. How many serial numbers can be constructed if the serial number must end with the number 6.
   d. How many serial numbers can be constructed if the numerical part of the serial number (the last three digits) can be divided by 5.
   e. How many serial numbers can be constructed if the serial number must end with an even number.

Q2. A box contains 15 Microprocessors, 5 of them are defective, 3 Microprocessors are drawn at random, what is the probability of:

   a. All the three selected Microprocessors are not defective.
   b. Only one of the three selected Microprocessors is defective.
   c. At least one of the three selected Microprocessors is defective.

Q3. A class contains 16 boys and 20 girls, quarter of the boys and half of the girls pass an exam. A student is selected randomly, what is the probability that:

   a. the selected student is a girl.
   b. the selected student pass the exam.
   c. the selected student pass the exam if you know that she is a girl.
Q4. A well maid dice is thrown twice. Consider the events:

A = the first throw results in two or four or six.
B = the sum of the two throws is at least 8.

Are the events A and B dependent events or not.

Q5. From a deck of ordinary playing cards, four cards are drawn at random, find the below probabilities:

a. If the first three cards are hearts, what is the conditional probability that the fourth is not a heart.
b. What is the probability that the three first cards are hearts and the fourth is spade.

Q6. Two dices are thrown simultaneously, let the random variable X represent the absolute value of the difference between the two dices:

a. What are the values that X can take.
b. Assign probabilities to each value of the random variable X.

Q7. Suppose that the probability is 0.25 that a damaged hard disk will be repaired. Calculate the below probabilities:

a. At most two of ten hard disks will be repaired.
b. At least eight of ten hard disks will be repaired.
c. Exactly three of ten hard disks will be repaired.