Assignment 02

Evaluation:

- As described in the syllabus, the assignments are 20% of the overall grade.

Submission:

- Submit your document at the beginning of the lecture on Tuesday 06/03/19. No late submission will be accepted.

Exercise 1: Use the Multiplication Principle:

The menu for Kay's Quick lunch is shown in this table.

Appetizers	**2.15**
Nachos	**1.90**
Salad	
Main courses	**3.25**
Hamburger	**3.65**
Cheeseburger	**3.15**
Fish filet	
Beverages	**0.70**
Tea	**0.85**
Milk	**0.75**
Cola	**0.75**
Root Beer	

How many dinners at Kay's Quick Lunch consist of one appetizer and one beverage?

Exercise 2: Use the Multiplication Principle:

A man has eight shirts, four pairs of pants, and five pairs of shoes. How many different outfits are possible?

Exercise 3: Use the addition Principle: Three departmental committees have 6, 12 and 9 members with no overlapping membership. In how many ways can these committees send one member to meet with the president?

Exercise 4: Two dices are rolled, one blue and one red.

a) How many outcomes give the sum of 4?
b) How many outcomes have the blue die showing 2?
c) How many outcomes have neither die showing 2?

Exercise 5:

In how many ways can we select a chairperson, vice-chairperson, and recorder from a group of 11 persons?

Exercise 6:

Determine how many strings can be formed by ordering the letters ABCDE :

a) Contains the substring ACE
b) Contains either the substring AE or the substring EA or both.

Exercise 7: Suppose that a coin is flipped and a die is rolled. Let E1 denote the event "the coin shows a tail", let E2 denote the event "the die shows a 3", let E3 denote the event "the coin shows heads and the die shows an odd number".

a) List the element of the event E1 or E2.
b) Are E1 and E3 mutually exclusive?

Exercise 8: Expand $(x + y)^4$ using the Binomial Theorem.