Democratic and Popular Republic of Aigeria

Mila university center	Year: 2024/2025
Institue of Informatic and Mathematic	Filed: LMD Mathematic
Introduction to probability and descriptive statistics	1^{st} Year

Series 4

Exercise 1

When rolling two dice, we are intrested in following invents:

A " The sum obtained is at least equal to 5 "

B " The sum obtained is at most equal to 5 "

- C " The sum obtained is strictly less than 3 "
- 1. translate \bar{B} and \bar{C}
- 2. A and B are they complementary?

3. \overline{B} and C are they mutually exclusive events?

Exercise 2

A maths class consists of 14 women and 16 men. Of these, 12 of the men and half of the women studying cumputer science. A person is chosen at random from the class. Find the probability that the person selected is:

(a) a woman

- (b) studing computer science
- (c) a woman who is studing computer science
- (d) a woman or is studing computer science

Exercise 3

A couple has two children. Let A be the event " they have one boy and one girl" and B the event " they have at most one boy". Are A and B independent?

Exercise 4

In a population, 70 % are vaccinated against Tuberculosis, 35% against Measles and 15 % against these two diseases.

What is the probability that a person is taken at random

- (a) Is not vaccinated against Tuberculosis
- (b) Is vaccinated against Tuberculosis or Measles
- (c) Is vaccinated against neither Tuberculosis nor Measles
- (d) Is vaccinated against Measles, knowing that he is vaccinated against Tuberculosis

(e) Is not vaccinated against Tuberculosis, knowing that he is not vaccinated against Measles

(f) Is vaccinated against Measles, knowing that he is not vaccinated against Tuberculosis.

$\underline{\text{Exercise}} 5$

The probability of passing a statistics exam is 0.6 for 120 students in the same section, 5 students are selected at random

- 1. Calculate the probability that the selected students pass the exam.
- 2. Calculate the probability that 3 of the students drawn pass the exam.

Exercise 6

We are going to solve the exercises presented in the lecture.