STATISTICS APPLIED TO BUSINESS ADMINISTRATION. ACADEMIC YEAR 2022-2023 PRACTICAL EXERCISES 1 AND 2 (25 MINUTES)

Date: _____

Complete name:_____ ID number:_____

EXERCISE 1 (10 POINTS)

The probability that, when a given potential client calls a taxi, the line is busy is 0.18. We assume independence between the different incoming calls.

1. **(3 points)** If the client calls 10 times, what is the probability that for exactly 2 of them the line is busy?

2. **(4 points)** If the client calls 150 times, what is the approximate probability that for more than 30 of them the line is busy?

3. **(3 points)** The taxi drivers indicate that the previous probability is not correct and that it is actually equal to 0.06. If the client calls 100 times, what is the approximate probability that for at most 8 of them the line is busy?

EXERCISE 2 (10 POINTS)

The number of clients that arrives by car at the parking lot of a given shopping mall per half an hour follows a Poisson distribution with mean equal to 2. We assume independence between the different client arrivals.

1. **(3 points)** What is the probability that, **in two** hours, at least 4 clients arrive?

2. **(3 points)** What is the approximate probability that, in one working day (in which the place remains open for 10 hours), fewer than 38 clients arrive?

3. **(4 points)** What should it be the minimum capacity the place should have so that, with probability of at least 0.97, all clients that arrive in a given hour can park without any problem?