STATISTICS APPLIED TO BUSINESS ADMINISTRATION. ACADEMIC YEAR 2020-2021 PRACTICAL EXERCISES 1 AND 2 (25 MINUTES)

Date: _____

Complete name: _____ ID number: _____

EXERCISE 1 (10 POINTS)

Let Z be a r.v. such that it follows a $b(0.40, n)$ binomial distribution with variance $\text{Var}(Z) = 3.60$.

1. **(2 points)** Compute the probability $P(Z = 8)$.
2. **(2 points)** Compute the probability $P(Z \leq 14)$.
3. **(2 points)** Compute the probability $P(2 < Z < 12)$.
4. **(2 points)** Compute the probability $P(Z \geq 6)$.
5. **(2 points)** Compute the probability $P(5 \leq Z < 11)$.

EXERCISE 2 (10 POINTS)

The number of students that arrive each hour at a given bookstore follows a Poisson distribution with modes in 4 and 5. We assume independence between the different students arriving at the bookstore.

1. **(3 points)** What is the probability that, in a given hour, more than 4 students arrive at the bookstore?
2. **(3 points)** What is the probability that, in a two-hour period, exactly 10 students arrive at the bookstore?
3. **(4 points)** What is the approximate probability that, **in a twenty-hour period**, exactly 102 students arrive at the bookstore? **Remark**: In order to solve this exercise you should round up your calculations, before going to the table, to one decimal place.