

**STATISTICS APPLIED TO BUSINESS
ADMINISTRATION. ACADEMIC YEAR 2018-2019
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 $b(0.80, n)$ binomial distribution, with variance $\text{Var}(Z) = 3.20$.

1. **(3 points)** Compute the probability $P(Z = 7)$.
2. **(2 points)** Compute the probability $P(Z \geq 12)$.
3. **(2 points)** What is the characteristic function for this r.v.?
4. **(3 points)** Compute the probability $P(12 < Z \leq 15)$.

EXERCISE 2 (10 POINTS)

The number of clients that arrive each hour at a given supermarket follows a Poisson distribution such that $P(X = 4) = P(X = 5)$. We assume independence between the different clients arriving at the supermarket.

1. (2 points) What is the probability that, in a given hour, exactly 4 people arrive at the store?
2. (2 points) What is the characteristic function for this r.v.?
3. (2 points) What is (are) the most likely number(s) of individuals that arrive, **in a six-hour period**, at the store?
4. (4 points) What is the approximate probability that, **in a six-hour period**, at least 35 individuals arrive at the store?