STATISTICS APPLIED TO BUSINESS ADMINISTRATION. ACADEMIC YEAR 2016-2017 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 $b(0.45, 12)$ binomial distribution.

1. **(2 points)** Compute the probability $P(Z = 8)$.
2. **(2 points)**What is the characteristic function for this r.v.?
3. **(2 points)** Compute the probability $P(Z > 12)$.
4. **(4 points)** Compute the probability $P(3 \leq Z < 5)$.

EXERCISE 2 (10 POINTS)

The number of cars that arrive each hour at a given car washing facility follows a Poisson distribution with variance equal to 2.5. We assume independence between the different cars arriving at the car washing facility.

1. **(2 points)** What is the probability that, in a given hour, exactly 4 cars arrive at the car washing facility?
2. **(2 points)** What is (are) the most likely number(s) of clients that arrive, **in a two-hour period**, at the car washing facility?
3. **(2 points)** What is the probability that, **in a two-hour period**, more than 8 cars arrive at the car washing facility?
4. **(4 points)** What is the probability that, in a period of eight hours, at least 30 cars arrive at the car washing facility?