STATISTICS AND PROBABILITY TEST - 4º ESO B

Exercise 1: (2 points) Given the following table showing the values and frequencies of a certain random variable

x_i	0	1	2	4	5
f_i	4	9	6	9	2

Work out:
  a) The percentage corresponding to each value of the variable
  b) The measures of central tendency
  c) Pearson's coefficient of variation
  d) The bar diagram, the histogram and the frequency polygon

Exercise 2: (2 points) Given the following table showing the values and frequencies of a certain random variable

x_i	[0,2]	(2,4]	(4,6]	(6,8]
f_i	6	9	4	3

Work out:
  a) The mode
  b) The measures of dispersion
  c) The bar diagram, the histogram and the frequency polygon

Exercise 3: (1 point) We want to study the affluence of people to the stadiums of a country during the football season, in order to find out if the crisis is affecting the game, and how. We choose ten stadiums in each one of the divisions and we count the people going to them each week. Indicate the population, the sample, and classify the random variable we are studying. Justify your answers.

Exercise 4: **(1.5 points)** We take three cards from a Spanish deck of cards, without replacement. Write the following events and find their probability:
  a) I get three horses
  b) The three cards are of the same suit
  c) The three cards have the same number
  d) There's, at least, a seven

Exercise 5: **(1.5 points)** A factory produces transistors and resistors bound to form part of the motherboard of a famous PC brand. We know that the 62% of their products are transistors, and the probability of a transistor being faulty is 3%. On the other hand, the probability of a resistor being faulty is 2%. If we take a random part that's been made at the factory:
  a) What's the probability of the part not being faulty?
  b) If the part is faulty, what's the probability that we took a resistor?
  c) What's the probability of the part being faulty knowing that we took a transistor?

Exercise 6: **(2 points)** Given two events so that $P(\overline{B}) = 0.4$, $P(A \cap B) = 0.5$ and $P(B \, / \, A) = 0.7$
  a) Are the events mutually exclusive? Are they independent?
  b) Work out the value of $P(A \cup B)$
  c) Work out the value of $P(A \, / \, B)$