PROBABILITY TEST – 4º ESO

Exercise 1: (2 ptos) I get two cards from a Spanish deck of cards with replacement. Find the probability:

a) Both of them are face cards   9/100

b) Both cards are of the same suit   1/4

c) I don't get any spade cards   9/16

d) I get at least an ace   19/100

Exercise 2: (2 ptos) I have an urn with 6 white balls, 5 green balls and 4 red balls. I get 3 balls without replacement. Find the probability that:

a) I get three green balls   2/91

b) I get one and only one red ball   44/91

c) I get two white balls and a green one   15/91

d) I get at least a white ball   53/65

Exercise 3: (2 ptos) Given two events A and B so that $P(\overline{A})=0.7$, $P(B)=0.6$ and $P(A/B)=0.5$

a) $P(A \cup B) = 0.6$

b) $P(B/A) = 1$

c) Are A and B independent events? Are they mutually exclusive? Why? **They are not independent and they are not mutually exclusive. Actually, the numbers indicate that $A \subset B$**

Exercise 4: (1 pto) Given the following events corresponding to a certain random experiment, $A=\{2,4,6\}$, $B=\{1,5\}$ and $C=\{2\}$, write the events:

a) $A \cup B = \{1,2,4,5,6\}$

b) $A \cap C = \{2\}$

c) $B \cap C = \varnothing$

d) $\overline{A} =$ **who knows**

Exercise 5: (1.5 ptos) A certain school has two fourth grade groups. 28 students belong to group A and 22 students belong to group B. 78% of the students in group A and 60% of students in group B passed the last English test. Taken a random student from the fourth grade, find the probability that:

a) They passed the English test   0.7008

b) They belong to group B, given that they didn't pass the test   0.5882

Exercise 6: (1.5 ptos) 29% of the palm trees in Seville are private, while the rest belong to the city. 5% of the public palm trees and 55% of the private ones have died since 2011 due to the red beetle (Rhynchophorus ferrugineus) plague. Considering a certain palm tree find the probability that:

a) It is still alive   0.805

b) It was private, given that it died   0.8179

c) If we had a total of 1908 palm trees in Seville, how many of them would die?   **About 372 trees**