PROBABILITY TEST – 4º ESO

Exercise 1: (1 pto) Given a certain random experiment with sample space $E=\{1,2,3,4,5,6,7,9\}$, let's consider the events $A=\{1,3,7\}$, $B=\{5,6,7\}$, $C=\{1\}$. Work out:

a) $A\cup B=$
b) $A\cap B=$
c) $B\cap C=$
d) $\overline{B}=$

Exercise 2: (1.5 ptos) I have an urn with 7 white balls, 4 green balls and 5 red balls. I get 3 balls **without** replacement. Find the probability that:

a) I get three red balls
b) I get two white balls and a green one
c) I get at least a red ball

Exercise 3: (1.5 ptos) I get two cards **with** replacement from a Spanish deck of cards. Find the probability that:

a) Both of them are horse cards
b) I get a face card and an ace card
c) I don't get any cup cards

Exercise 4: (2 ptos) Given two events A and B of a random experiment so that $P(A)=0.3$, $P(\overline{B})=0.2$ and $P(A\cup B)=0.86$ work out:

a) **(0.75)** $P(A\cap B)=$
b) **(0.5)** $P(B/A)=$
c) **(0.75)** Are A and B independent events? Are they mutually exclusive? Why?

Exercise 5: (2 ptos) 75% of the people at a working center drink coffee in the mornings, 20% drink tea and 10% drink both beverages. Taking an employee find the probability that:

a) **(0.75)** They drink coffee knowing that they drink tea
b) **(1.25)** They drink neither coffee nor tea

Exercise 6: (2 ptos) 45% of the Spanish people going on holidays this next summer will jump on a plane, 30% of them will take the train and the rest will use their cars. 15% of the ones using the plane, 25% of the ones using the train and 60% of the ones using a car are headed to the beach. Taking a random person find the probability that:

a) They are going to the beach
b) They will use the car knowing that they won't go to the beach