Exercise 1: (1.25 points) Given the events $A = \{1,3,5,7\}$, $B = \{1,2,3,4,5\}$ and $C = \{9\}$ of the sample space $E = \{1,2,3,4,5,6,7,8,9\}$, work out:

a) $\overline{A} =$

b) $A \cup B =$

c) $A \cap \overline{B} =$

d) $B \cup C =$

e) $B \cap C =$

Exercise 2: (1.5 points) We draw two cards from a Spanish deck of cards without replacement. Find the probability that:

a) We get two kings

b) We get two coin cards

c) We get two cards of the same suit

d) We don't get any horses

e) We get at least one spade card

Exercise 3: (1.5 points) 71% of the students of a class are going to the beach this summer, 32% of them are going to the country and 14% of them are going to both places. Taking a random student, find the probability that:

a) They go to the beach or to the country

b) They will go to the country knowing that they are going to the beach

c) They are going neither to the beach nor to the country

d) They are not going to the country

Exercise 4: (1.5 points) Given two events A and B so that $P(\overline{A}) = 0.4$, $P(B) = 0.7$ and $P(B/A) = 0.75$, find:

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

b) $P(A/B) =$

c) Are A and B independent events? Why?

Exercise 5: (1.75 points) I have an urn with 7 red balls, 5 green balls and 2 blue balls. I draw three balls with replacement. Find the probability that:

a) I get 3 green balls

b) All three balls have different colors

c) I get two red balls and a blue one

d) I don't get any green balls

e) I get at least one red ball

Exercise 6: (1.25 points) We are planning a triple exchange program for next year, England-Poland-Spain. We will reunite a total of 40 students, 16 of which are English, 10 are Polish and the rest are Spanish. 65% of the English participants, 32% of the Polish and 57% of the Spanish are girls. Taking a random student find the probability that:

    a) I chose a girl

    b) They are from Poland given that I chose a boy

Exercise 7: (1.25 points) 62% of the Spanish population have watched the Game of Thrones series. 23% of the ones who have watched it and 12% of the ones who haven't watched it, however, have read the books. Taken a random person find the probability that:

    a) They haven't read the books

    b) They have watched the show, given that they have read the books

GAME OF THRONES