Module: Probabilities-Statistics

$$\boxed{\text{Worksheet n}\circ 4}$$

(Introduction to probabilities)

Exercice n°1 :
A, B and $A \cup B$ are three events with probabilities 0.4, 0.5 and 0.6.
Calculate the probability of the events :
$\bar{A}, \ \bar{B}, A \cap B, \bar{A} \cap B, A \cap \bar{B}, \bar{A} \cap \bar{B}, \bar{A} \cup B, , \bar{A} \cup \bar{B}.$

Exercice n°2 :
A box contains 15 light bulbs, which 5 are defective. We take out 3 bulbs at random. Find the probability in

a) No bulb is defective;

b) One bulb is defective;

c) Two bulbs are defective.

d) all 3 bulbs are defective;

e) At least one bulb is defective.

f) At least two bulbs are defective.

*Exercice n°3 : An urn contains 12 balls: 3 red, 4 blue and 5 yellow. 3 balls are drawn simultaneously. Calculate the probability of the following events:

a) A="all three balls are red" ;

b) B="one ball of each colour is drawn" ;

c) C="none of the three balls is red" ;

d) D="at least one of the three balls is red" ;

e) E="at least one of the three balls is blue" ;

f) F="at most one of the three balls is blue" ;

Exercice n°4 : A survey gives the following information: 35 % of people go to cinema C, 12 % to museum M and 6 % to both. Express the percentage of people:

a) going to the cinema or museum.

b not going to the cinema.

c) going neither to the cinema nor to the museum.

d going to the cinema but not to the museum.

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