

Probabilité et Statistique ¹⁶ Jan 19

Série TD N° 01 :

EX 01 :

$$1) \Omega = \{(1,1,1), (1,1,2), \dots, (6,6,6)\}$$

$$\text{Card}(\Omega) = 6^3 = \boxed{216}$$

2) On obtient au moins un as

Card(A) ?

$$\text{Card}(\Omega) = \text{Card}(A) + \text{Card}(\bar{A})$$

$$\text{Card}(A) = \text{Card}(\Omega) - \text{Card}(\bar{A})$$

$$\text{Card}(A) = 6^3 - 5^3 = 91$$

$$3) \bar{B} = \{(1,2,3), (1,3,2), \dots, (4,5,6)\}$$

Sans répétition.

$$\text{Card}(\bar{B}) = A^k = \frac{6!}{(6-3)!} = 4 \times 5 \times 6$$

$$\boxed{\text{Card}(\bar{B}) = 120}$$

$$\text{Card } B = \text{Card } \Omega - \text{Card } \bar{B}$$

$$\boxed{\text{Card } B = 96}$$

EX 02 :

$$1) A \cap \bar{B} \cap \bar{C}$$

$$2) A \cap B \cap \bar{C}$$

$$3) A \cap B \cap C$$

$$4) (A \cap \bar{B} \cap \bar{C}) \cup (B \cap \bar{A} \cap \bar{C}) \cup (C \cap \bar{A} \cap \bar{B})$$

$$\cup (A \cap B \cap \bar{C}) \cup (\bar{A} \cap B \cap C) \cup$$

$$(A \cap \bar{B} \cap C) \cup (A \cap B \cap C)$$

$$\Leftrightarrow (A \cup B \cup C)$$

$$5) [(A \cap B \cap \bar{C}) \cup (A \cap \bar{B} \cap C) \cup$$

$$(\bar{A} \cap B \cap C)] \cup (A \cap B \cap C)$$

$$6) (A \cap \bar{B} \cap \bar{C}) \cup (\bar{A} \cap B \cap \bar{C}) \cup$$

$$(A \cap \bar{B} \cap C)$$

$$7) (A \cap B \cap \bar{C}) \cup (A \cap \bar{B} \cap C) \cup$$

$$(\bar{A} \cap B \cap C)$$

$$8) \bar{A} \cap \bar{B} \cap \bar{C}$$

$$9) (A \cap \bar{B} \cap \bar{C}) \cup (\bar{A} \cap B \cap \bar{C}) \cup$$

$$(\bar{A} \cap \bar{B} \cap C) \cup (\bar{A} \cap \bar{B} \cap \bar{C})$$