

Corrigé Exercice 1

$$P(A \cup B) = P(A) + P(B) - P(A \cap B) = 0,3 + 0,6 - 0,2 = 0,7.$$

$$P_B(A) = \frac{P(A \cap B)}{P(B)} = \frac{0,2}{0,6} = \frac{1}{3} \text{ et } P_A(B) = \frac{P(A \cap B)}{P(A)} = \frac{0,2}{0,3} = \frac{2}{3}.$$

Corrigé Exercice 2

- $P_A(B) = \frac{P(A \cap B)}{P(A)}$ donc $P(A \cap B) = P_A(B) \times P(A) = 0,32$.
- $P_B(A) = \frac{P(A \cap B)}{P(B)}$ donc $P(B) = \frac{P(A \cap B)}{P_B(A)} = \frac{0,32}{0,6} = \frac{8}{15}$.
- $P(A \cup B) = P(A) + P(B) - P(A \cap B) = \frac{46}{75}$.

Corrigé Exercice 3

- Notons D "le dossier est détecté" et F "le dossier est frauduleux".
 $P(D \cap F) = P(D)P_D(F) = 0,1 \times 0,5 = 0,05$.
- $P(F) = \frac{P(F \cap D)}{P_F(D)} = \frac{0,05}{0,8} = 0,0625$.

Corrigé Exercice 4

- $P_A(B) = 1 - P_A(\bar{B}) = 0,1$.
- $P_{\bar{A}}(\bar{B}) = 0,7$.
- $P(\bar{A}) = 1 - P(A) = 0,55$ et $P_{\bar{A}}(B) = 1 - P_{\bar{A}}(\bar{B}) = 0,3$.
 $P(A \cap B) = P(A) \times P_A(B) = 0,45 \times 0,1 = 0,045$, $P(A \cap \bar{B}) = 0,405$
 $P(\bar{A} \cap \bar{B}) = 0,385$ et $P(\bar{A} \cap B) = 0,165$.

