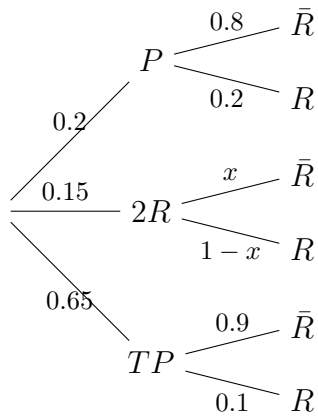


Les probabilités

Exercice 1.



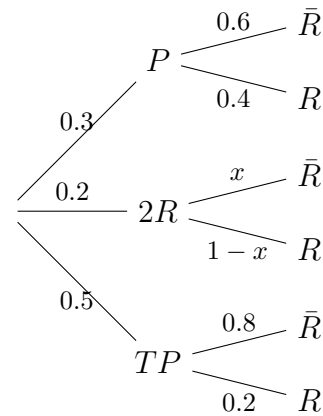
a) $p = 0.65 \cdot 0.9 \simeq \boxed{58.5\%}$

b) $p(A|B) = \frac{p(A \cap B)}{p(B)} = \frac{0.2 \cdot 0.2}{0.15} \simeq \boxed{26.67\%}$

c) $y = 1 - x$

$$0.15 = 0.2 \cdot 0.2 + 0.15y + 0.65 \cdot 0.1$$

$$\Leftrightarrow 0.15y = 0.045 \quad \Leftrightarrow y = 0.3 = \boxed{30\%}$$



$p = 0.5 \cdot 0.8 = \boxed{40\%}$

$p(A|B) = \frac{p(A \cap B)}{p(B)} = \frac{0.3 \cdot 0.4}{0.25} = \boxed{48\%}$

$y = 1 - x$

$$0.25 = 0.3 \cdot 0.4 + 0.2y + 0.5 \cdot 0.2$$

$$\Leftrightarrow 0.2y = 0.03 \quad \Leftrightarrow y = 0.15 = \boxed{15\%}$$

Exercice 2.

a) $p = \frac{C_1^4}{C_2^8} = \frac{4}{28} \simeq \boxed{14.29\%}$

b) $p = \frac{C_2^4}{C_2^8} = \frac{6}{28} \simeq \boxed{21.43\%}$

c) $A \cap B : 1$ et $B : C_1^4 \cdot C_1^4 = 16$

$$p(A|B) = \frac{p(A \cap B)}{p(B)} = \frac{1}{16} = \boxed{6.25\%}$$

$p = \frac{C_1^5}{C_2^{10}} = \frac{5}{45} \simeq \boxed{11.11\%}$

$p = \frac{C_2^5}{C_2^{10}} = \frac{10}{45} \simeq \boxed{22.22\%}$

$A \cap B : 1$ et $B : C_1^5 \cdot C_1^5 = 25$

$$p(A|B) = \frac{p(A \cap B)}{p(B)} = \frac{1}{25} = \boxed{4.0\%}$$

Exercice 3.

a) 6% achètent uniquement l'appareil photo

$0.45 - 0.2 = 0.25 = 25\%$ achètent uniquement la carte mémoire

$$\Rightarrow p = 0.25 + 0.14 = \boxed{39\%}$$

b) $A \cap B$: 14% et B : 39%

$$p(A|B) = \frac{p(A \cap B)}{p(B)} = \frac{14}{39} \simeq \boxed{35.9\%}$$

$$c) p = 1 - 0.8^3 = \boxed{48.8\%}$$

$$d) 1 - 0.8^n > 0.99 \Leftrightarrow 0.8^n < 0.01$$

$$\Leftrightarrow n > \log_{0.8}(0.01) \simeq 20.64$$

$$\Rightarrow \boxed{21 \text{ clients}}$$

22% achètent uniquement l'appareil photo

$0.65 - 0.4 = 0.25 = 25\%$ achètent uniquement la carte mémoire

$$\Rightarrow p = 0.25 + 0.18 = \boxed{43\%}$$

$A \cap B$: 18% et B : 43%

$$p(A|B) = \frac{p(A \cap B)}{p(B)} = \frac{18}{43} = \boxed{41.86\%}$$

$$p = 1 - 0.6^3 = \boxed{78.4\%}$$

$$1 - 0.6^n > 0.99 \Leftrightarrow 0.6^n < 0.01$$

$$\Leftrightarrow n > \log_{0.6}(0.01) \simeq 9.02$$

$$\Rightarrow \boxed{10 \text{ clients}}$$