Experience:
  Tirer succ. sous remise

2 jetons.

$$\text{card } \Omega = A_{10}^2 = 10 \times 9$$
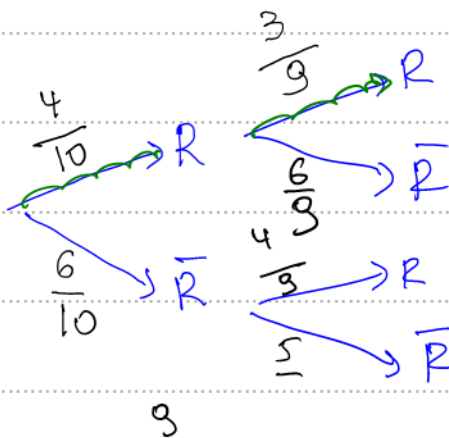
$$\begin{array}{|l|} 4\ R : 1,1,1,0 \\ 6\ N : 111100 \end{array}$$

1) $p(1^{er}$ jeton et le 2eme sont rouges$)$

$$p(\textcircled{R}, \textcircled{R}) = \frac{A_4^2}{A_{10}^2} = \frac{4 \times 3}{90}$$

$$= \frac{4}{10} \times \frac{3}{9}$$

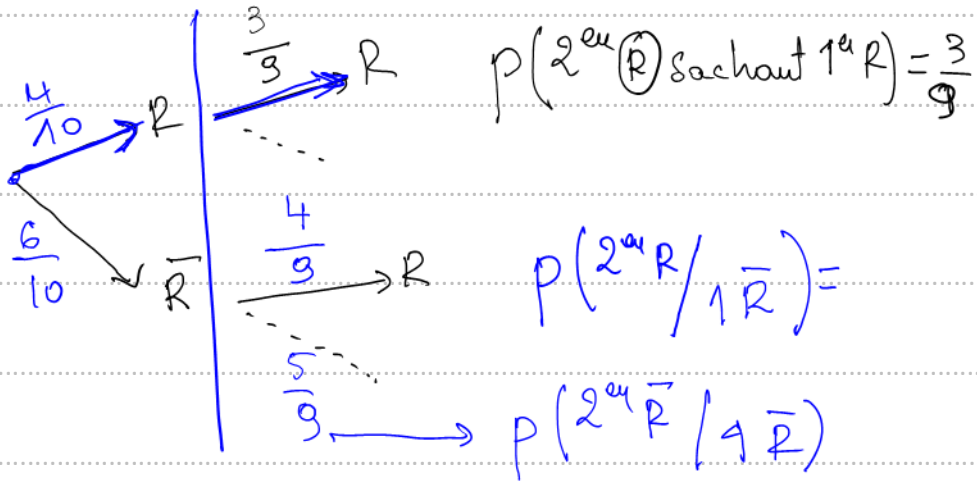$$p(R \cap R) = \frac{4}{10} \times \frac{3}{9}$$

2) $p(2^{eme}$ rouge$) = p\left[(R, R) \underset{4}{ou} (\overline{R}, R)\right]$

$$p\left(2^{eme}\textcircled{R}\right) = p\left((R,R)\right) + p\left(\overline{R},R\right) \quad - \circ$$

$$p\left(2^{eme}\textcircled{R}\right) = \frac{4}{10} \times \frac{3}{9} + \frac{6}{10} \times \frac{4}{9} = \frac{36}{90}$$

$p\left(2^{eu}\textcircled{R}\ \text{sachant}\ 1^{a}R\right) = \frac{3}{9}$

$p\left(2^{a u}R / 1\overline{R}\right) =$

$p\left(2^{a u}\overline{R} / 1\overline{R}\right)$

Tirer : succ 2 jetons
Sans remise.

$$\begin{array}{|ccc|} \hline \triangle & \triangle & \triangle \bigcirc \\ \triangle & \triangle \bigcirc \bigcirc \\ \square & \square \\ \hline \end{array}$$
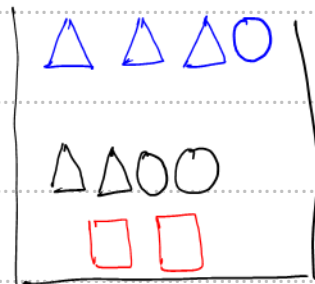
$p\left(2^{eme}\ \text{jeton}\ \triangle\ \text{sachant le}\ 1^{a}\ \bigcirc\right)$

$\boxed{\dfrac{5}{9}}$

$$p\left(1\bigcirc\ et\ \triangle\right) = \frac{3}{10} \times \frac{5}{9}$$
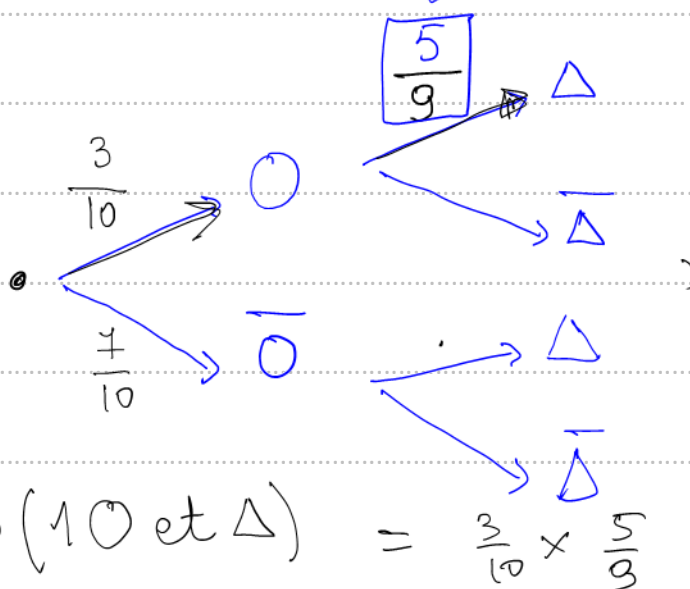
$$P\left(2^{eme} \triangle / 1^{er} \triangle\right) = \frac{4}{9}$$
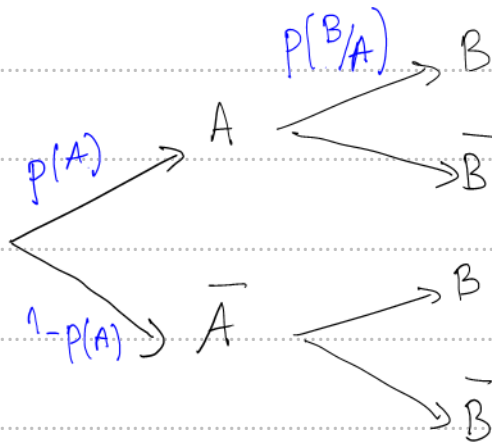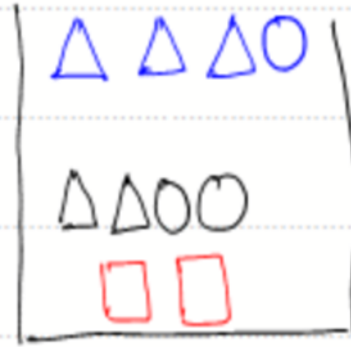
$$P(A) \times P\left(B/A\right) = P(A \cap B)$$

$$\Updownarrow$$

$$P\left(B/A\right) = \frac{P(A \cap B)}{P(A)}.$$

$$3\,\text{(R)} : 0, 1, 1$$
$$4\,\text{(B)} \quad 0\ 0\ 1\ 1$$
$$3\,\text{(N)} : -1, 0, 1$$

1] Tirer simultanement 3 boules :

$$\text{card }\Omega = C_{10}^3 = 120$$

$\rightarrow$ $A = (3R)$ ou $3B$ ou $3N$

$$P(A) = \frac{C_3^3 + C_4^3 + C_3^3}{120} = \frac{6}{120}$$

$\rightarrow$ $B = \{1\ 0\text{ et }2\,\text{①}\}$ ou $\{2\ 0\text{ et }1\}$ ou $\{2\ 0\text{ et }\text{(-1)}\}$

ou $\{1\ 0 \quad 1\,\text{(-1)}\text{ et }1\,\text{①}\}$ ou $\{3\ 0\}$.

OU

$$B = \{1\ 0\text{ et }2\,\overline{0}\}\ .\ \text{ou}\ \{2\ 0\text{ et }1\overline{0}\}\ .\ \text{ou}\ \{3\ 0\}$$

$$P(B) = \frac{C_4^1 \times C_6^2 + C_4^2 \times C_6^1 + C_4^3}{120}$$

4

$$= \frac{4 \times 15 + 6 \times 6 + 4}{120} = \frac{100}{120}$$

$2^{ème}$ $\overline{B} = (\text{produit} \neq 0)$

$$\overline{B} = \{3\,\overline{0}\}$$

$$P(\overline{B}) = \frac{C_6^3}{120} = \frac{20}{120}$$

$$\text{dnc } P(B) = 1 - P(\overline{B}) = \frac{100}{1} = \frac{5}{6}$$

$$C = \{3\,\circledcirc\} \text{ ou } \{1\,\circledcirc, \text{①} \text{ et } \text{①}\}$$

$$P(C) = \frac{C_4^3 + C_4^1 \times C_5^1 \times C_1^1}{120} = \frac{1}{5}$$

$$\overset{20 \qquad 6}{* \; P\left(A/B\right) = \frac{P(A \cap B)}{P(B)} = \frac{?}{\frac{5}{6}}}$$

$$A \cap B = 3\,\text{Ⓡ} \text{ ou } 3\,\text{Ⓝ} \text{ ou } \{0_B, 2\,B_{\overline{0}}\} \text{ ou } (2\,0_B, 1\,B_{\overline{0}})$$

$$P(A \cap B) = \frac{C_3^3 + C_3^3 + \boxed{C_2^1 \times C_2^2} + C_2^2 \times C_2^1}{120}$$

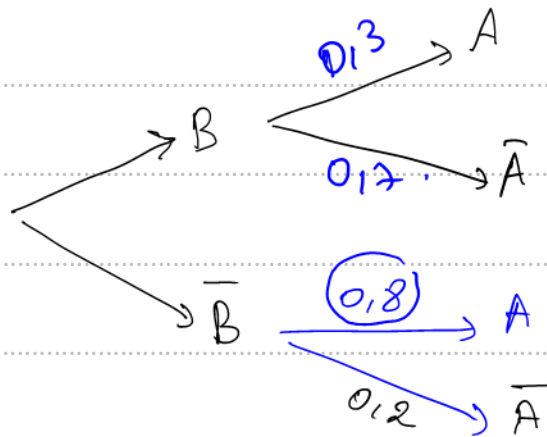$$p(A \cap B) = \frac{6}{120} = \frac{1}{20}$$

d'où $p(A/B) = \dfrac{P(A \cap B)}{P(B)} = \dfrac{\frac{1}{20}}{\frac{5}{6}} = \dfrac{6}{100} = \dfrac{3}{50}$

Remarque:

$\overline{A}$: les 3 boules ne sont pas de m couleur.

$\overline{A}$ $\left\{ \begin{array}{l} \bigcirc \bigcirc \bigcirc \quad \text{ou} \quad \bigcirc\bigcirc\bigcirc \quad \bigcirc\bigcirc \; \bigcirc \\ \bigcirc\bigcirc\bigcirc \quad \bigcirc\bigcirc \; \bigcirc \\ \bigcirc\bigcirc \; \bigcirc \quad \bigcirc\bigcirc \; \bigcirc \end{array} \right.$

$$\boxed{p\left(A/B\right) + p\left(\overline{A}/B\right) = 1}$$

puisque $p(\overline{A}/B) = 1 - p(A/B) = 1 - \dfrac{6}{100}$

$$= \dfrac{94}{100}$$

b)

au moins 1 (R)

$\begin{cases} (R , V , V) \\ (V , R , V) \\ (V , V , R) \\ (R \ R \ V) \\ (V \ R \ R) \\ (R , V R) \\ (R \ R \ R) \end{cases}$

au moins 1R ___ $(V , V \ V)$

$\boxed{\dfrac{1}{\Omega}}$

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b) $p(A \cap C) = ?$

$(A \cap C) = 3 \ (N)$

$p(A \cap C) = \dfrac{C_3^3}{120} = \dfrac{1}{120}$

$$* \quad p(A \cup C) = p(A) + p(C) - p(A \cap C)$$

$$= \frac{6}{120} + \frac{1}{5} - \frac{1}{120} = \ldots$$

$$* \quad p(A/C) = ?$$

Sachant que la Somme des N° est Zero (C)

Calculer la proba qu'elle soient 3 m^ couleurs (A)

$$\cdot \quad P_C(A) = p(A/C) = \frac{P(A \cap C)}{P(C)} = \frac{\frac{1}{120}}{\frac{1}{5}}$$

$$= \frac{5}{120} = $$

$$\cdot \quad p(A/\bar{C}) = \frac{P(A \cap \bar{C})}{P(\bar{C})} = \frac{?}{\frac{4}{5}}$$

$$(A \cap \bar{C}) = 3\textcircled{R} \text{ ou } 3\textcircled{R}$$

$$p(A \cap \bar{C}) = \frac{C_3^3 + C_4^3}{120} = \frac{5}{120}$$

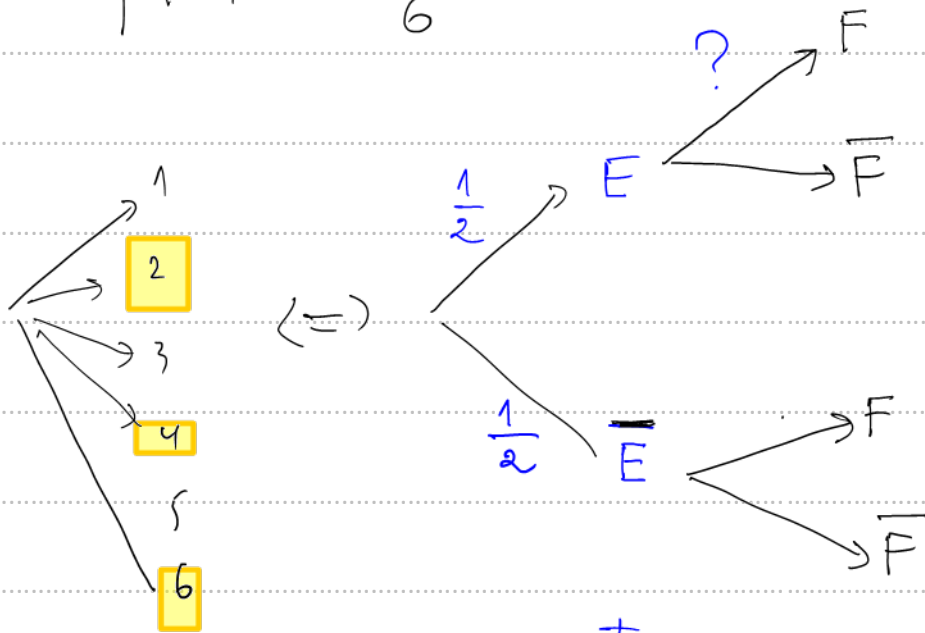$$p\left(A/\bar{C}\right) = \frac{5/120}{\frac{4}{5}} = \frac{25}{480} = \ldots$$

2] $\Omega = \{1,2,3,4,5,6\}$.

$$p(E) = \frac{3}{6} = \frac{1}{2}$$

3]

$$p\left(F/E\right) = \frac{\overset{et}{p(F\cap E)}}{p(E)} = \frac{?}{\frac{1}{2}}$$

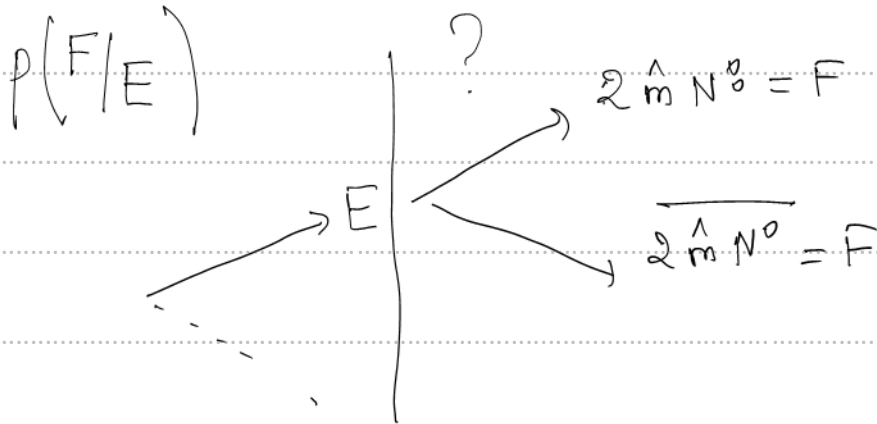$$F\cap E = \left(\text{Pair}, 0, 0\right) \text{ ou } \left(E,1,1\right) \text{ ou } \left(E,-1,-1\right)$$

$$p(F\cap E) = \frac{1}{2} \times \frac{4}{10} \times \frac{4}{10} + \frac{1}{2} \times \frac{5}{10} \times \frac{5}{10} + \frac{1}{2} \times \frac{1}{10} \times \frac{1}{10}$$

$$\underbrace{\phantom{\frac{1}{2} \times \frac{4}{10} \times \frac{4}{10}}}_{\frac{4^2}{10^2}}$$

$$P\left(\dfrac{F}{E}\right) = \dfrac{\dfrac{1}{2}\left(\dfrac{4^2}{10^2} + \dfrac{5^2}{10^2} + \dfrac{1^2}{10^2}\right)}{\dfrac{1}{2}}$$

$$P\left(\dfrac{F}{E}\right) = \dfrac{4^2 + 5^2 + 1^2}{100.}$$

ou

$$P\left(\dfrac{F}{E}\right)$$

$2\,\hat{m}\,N^0 = F$

$\overline{2\,\hat{m}\,N^0} = F$

$$P\left(\dfrac{F}{E}\right) = P\left[(0\ 0)\quad \text{ou}\quad (2\ \textcircled{1})\quad \text{ou}\quad 2\ \textcircled{1}\right]$$

$$= \dfrac{4^2 + 5^2 + 1^2}{10^2}$$

$$\times\quad P\left(\dfrac{F}{\overline{E}}\right) = P\left[(0,0)\quad \text{ou}\quad (1,1)\right]$$

$$= \dfrac{4}{10} \times \dfrac{3}{9} + \dfrac{5}{10} \times \dfrac{4}{9}$$

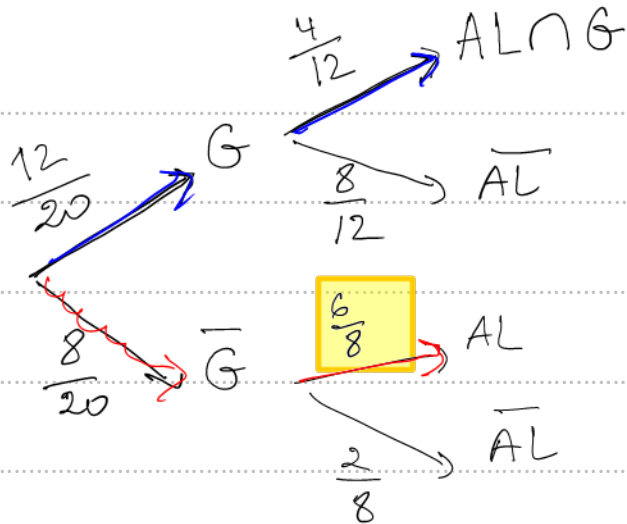$$= \frac{A_4^2 + A_5^2}{A_{10}^2}$$
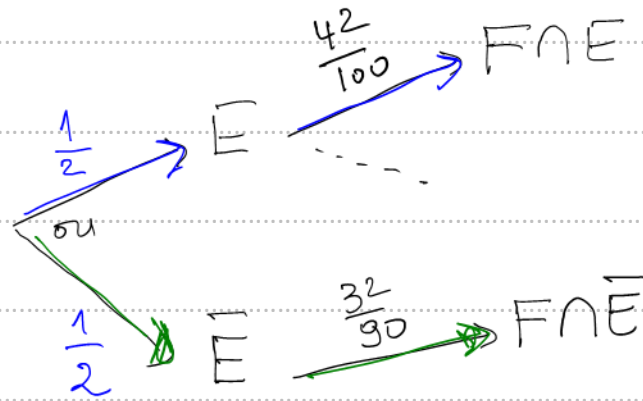
$$F = \underbrace{(E \cap F)} \quad ou \quad \underbrace{(\bar{E} \cap F)}$$

$$P(F) = P(E \cap F) + P(\bar{E} \cap F) \underline{\quad} 0$$

$$= \frac{1}{2} \times \frac{42}{100} + \frac{1}{2} \times \frac{32}{90}$$

b)

$$P\left(\frac{E}{F}\right) = \frac{P(E \cap F)}{P(F)}$$

$$= \frac{\frac{1}{2} \times \frac{42}{100}}{\frac{1}{2} \times \frac{42}{100} + \frac{1}{2} \times \frac{32}{90}}$$

$$\xrightarrow{\frac{12}{20}} G \xrightarrow{\frac{4}{12}} AL \cap G$$

$$\xrightarrow{\frac{8}{12}} \overline{AL}$$

$$\xrightarrow{\frac{8}{20}} \overline{G} \xrightarrow{\frac{6}{8}} AL$$

$$\xrightarrow{\frac{2}{8}} \overline{AL}$$

- $p\left(G \cap AL\right) = \dfrac{12}{20} \times \dfrac{4}{12} = \dfrac{4}{20}$

- $P\left(\dfrac{AL}{\overline{G}}\right) = \dfrac{6}{8}$

- $p(AL) = ?$

$$AL = \left(AL \cap G\right) \text{ ou } \left(AL \cap \overline{G}\right)$$

$$P(AL) = \dfrac{12}{20} \times \dfrac{4}{12} + \dfrac{8}{20} \times \dfrac{6}{8}$$

$$= \underline{}$$