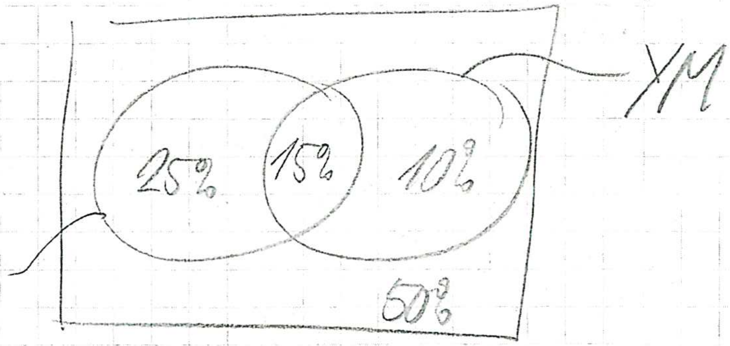
4.23

a) $\frac{15}{40} = \frac{3}{8} = 37{,}5\%$



b) $\frac{10}{25} = \frac{2}{5} = 40\%$

c) 50%

4.22

a) $\frac{2}{6} = \frac{1}{3}$

b) $\frac{3}{11}$

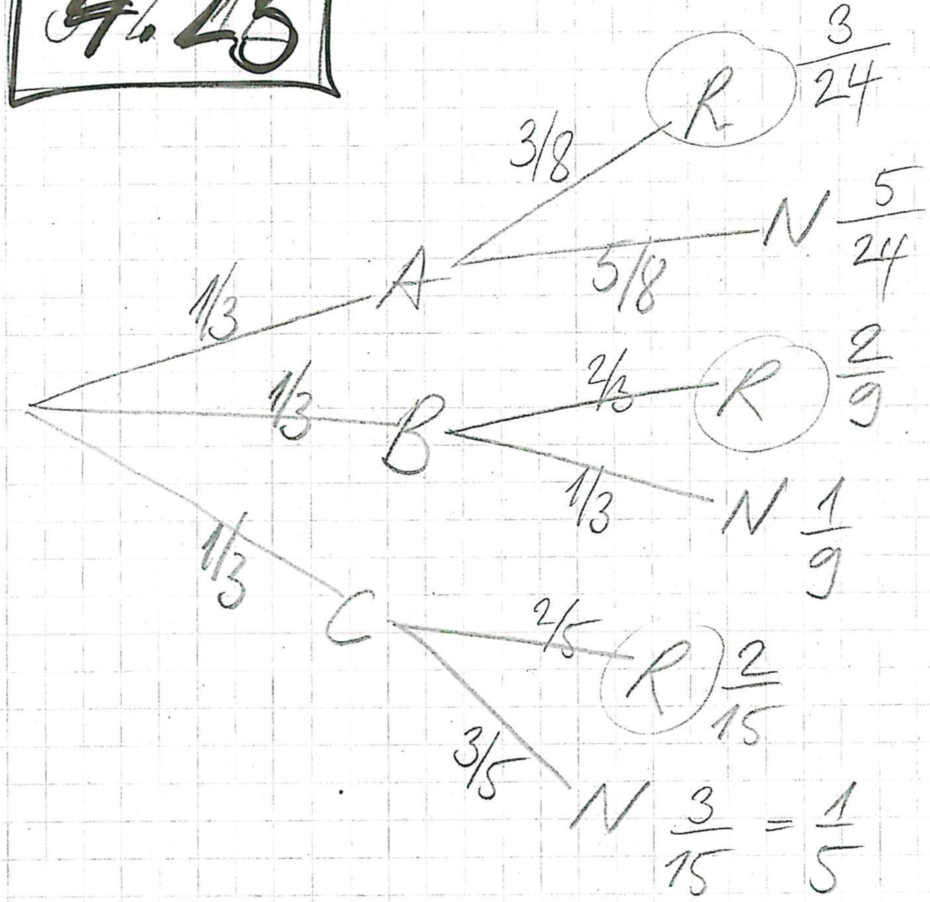
c) $\frac{4}{30} = \frac{2}{15}$

d) $\frac{4}{30} = \frac{2}{15}$

~~1;1~~	1;2	1;3	1;4	1;5	1;6
2;1	~~2;2~~	2;3	2;4	2;5	2;6
3;1	3;2	~~3;3~~	3;4	3;5	3;6
4;1	4;2	4;3	~~4;4~~	4;5	4;6
5;1	5;2	5;3	5;4	~~5;5~~	5;6
6;1	6;2	6;3	6;4	6;5	~~6;6~~

Somme supérieure à 9

$\boxed{4.25}$



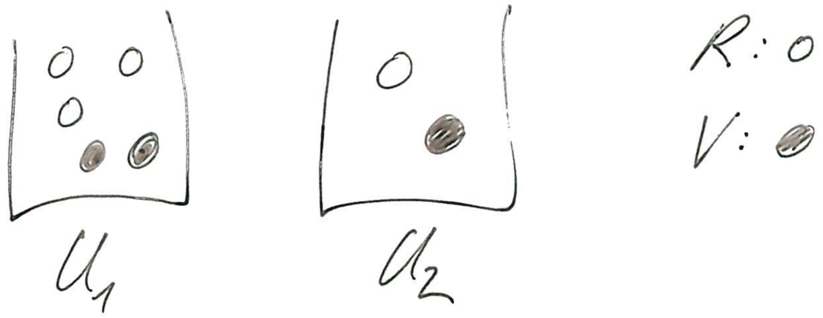
a) $$p(R) = \frac{3}{24} + \frac{2}{9} + \frac{2}{15}$$

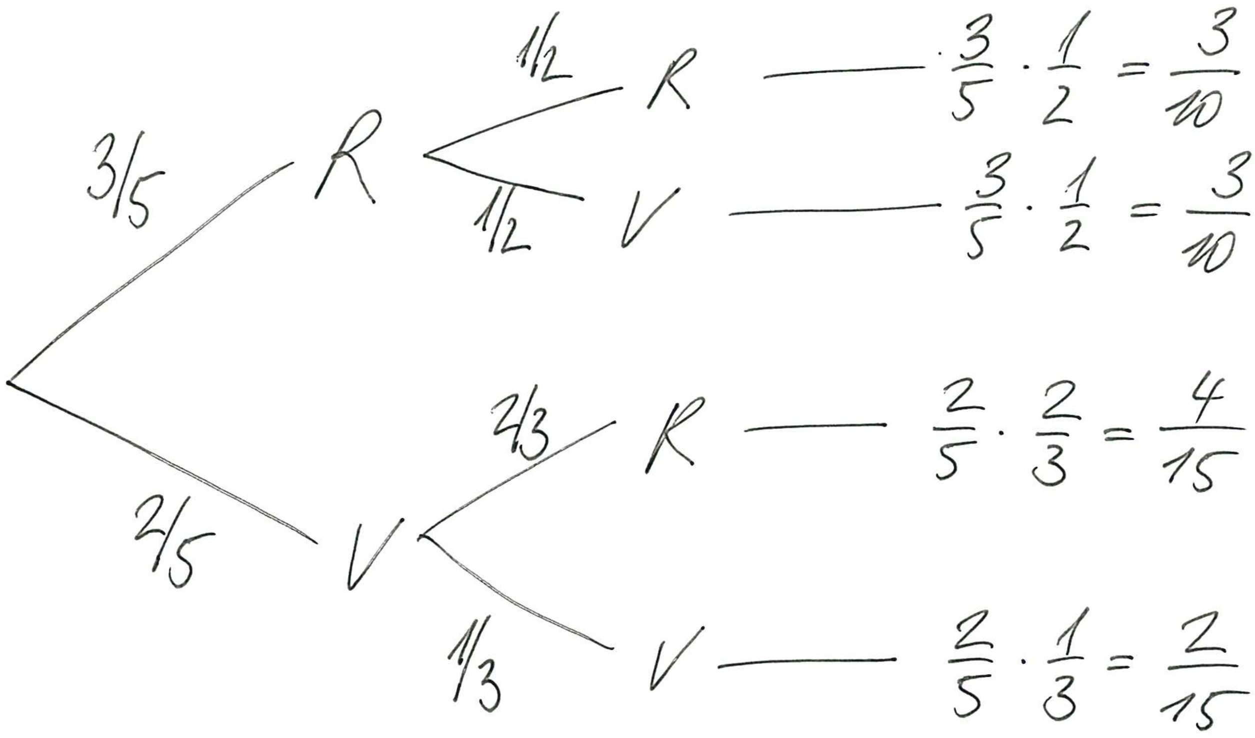
$$= \frac{45 + 80 + 48}{360} = \frac{173}{360}$$

b) $$p(A \,\&\, R) = \frac{3/24}{173/360} = \frac{3 \cdot \cancel{360}^{15}}{\cancel{24} \cdot 173}$$

$$= \frac{45}{173}$$

$\boxed{4.26}$





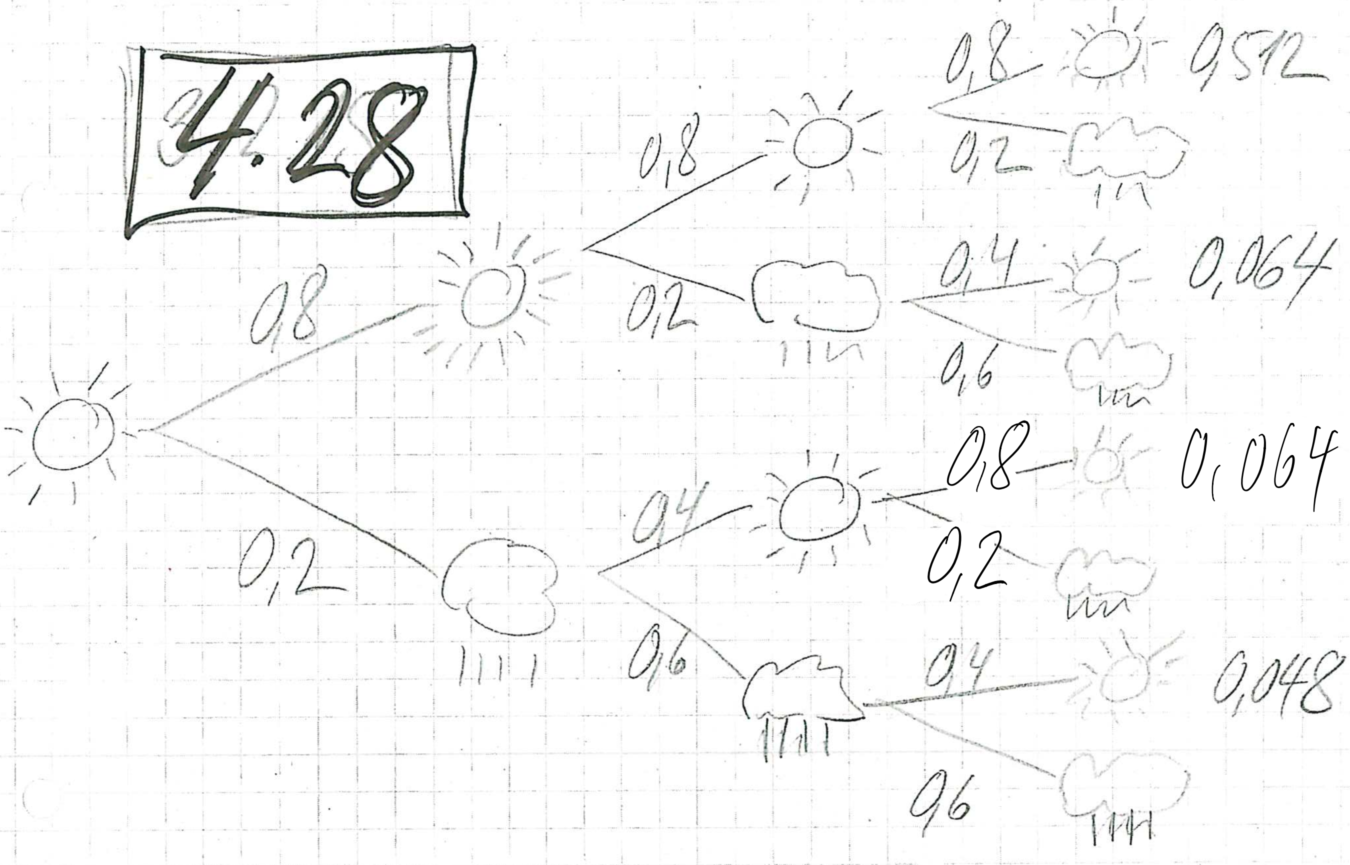
a) $p(R) = \frac{3}{10} + \frac{4}{15} = \frac{17}{30} \simeq 56{,}7\%$

b) $p(R \text{ si } 1^{ere} R) = \frac{1}{2} = 50\%$

c) $p(1^{ere} R \text{ si } R) = \frac{p(1^{ere} R \,\&\, R)}{p(R)}$

$$= \frac{3/10}{17/30} = \frac{3}{10} \cdot \frac{30}{17} = \frac{9}{17} \simeq 52{,}9\%$$

4.28



a) $p(3 \text{ jours de beau}) = 0{,}8^3 = 0{,}512$

b) $p(\text{beau}) = 0{,}048 + 0{,}064 + 0{,}064 + 0{,}512$

$= 0{,}688$

4.27

$\boxed{A}$ (a) $\dfrac{C_3^9}{C_3^{15}} = \dfrac{\cancel{9}^{3} \cdot \cancel{8}^{4} \cdot \cancel{7}^{1}}{{}_{5}\cancel{15} \cdot \cancel{14}_{2} \cdot 13} = \dfrac{12}{65}$

(b) $1 - \dfrac{12}{65} = \dfrac{65}{65} - \dfrac{12}{65} = \dfrac{53}{65}$

Autre façon de calculer:

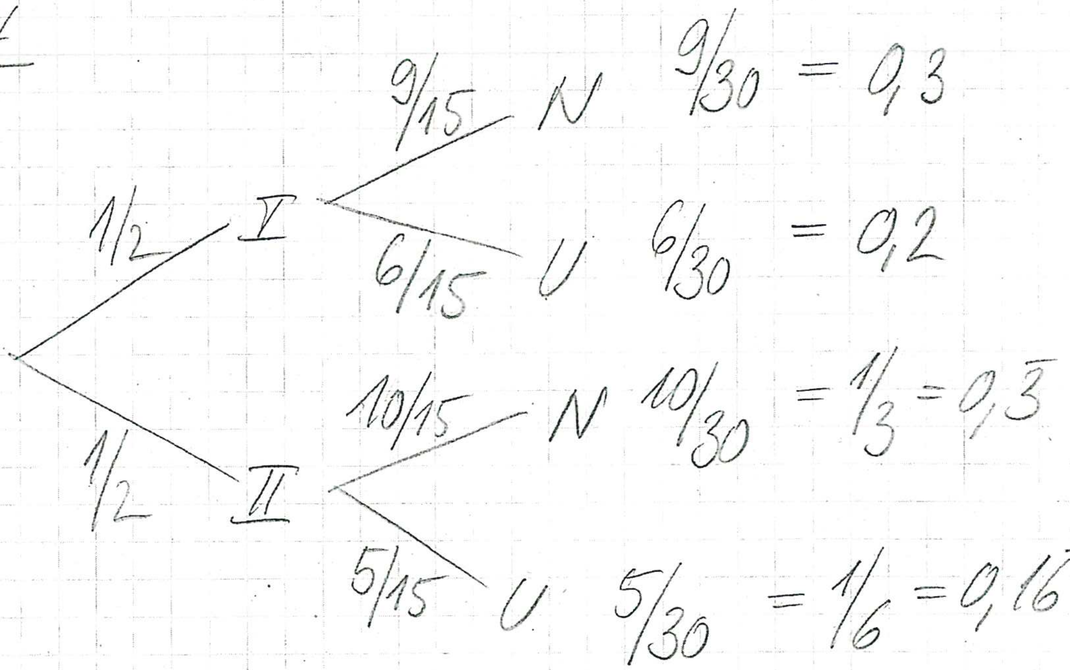
$$\frac{C_1^6 \cdot C_2^9 + C_2^6 \cdot C_1^9 + C_3^6 \cdot C_0^9}{C_3^{15}} = \frac{216 + 135 + 20}{455} = \frac{371}{455} = \frac{53}{65}$$

$\boxed{41.27}$

$\boxed{A}$ (c) Il reste 9 neuves et 4 usagées.
Il nous reste 1 balle à prendre. La probabilité de tirer une troisième balle usagée se calcule donc comme suit :

$P = \frac{4}{13}$

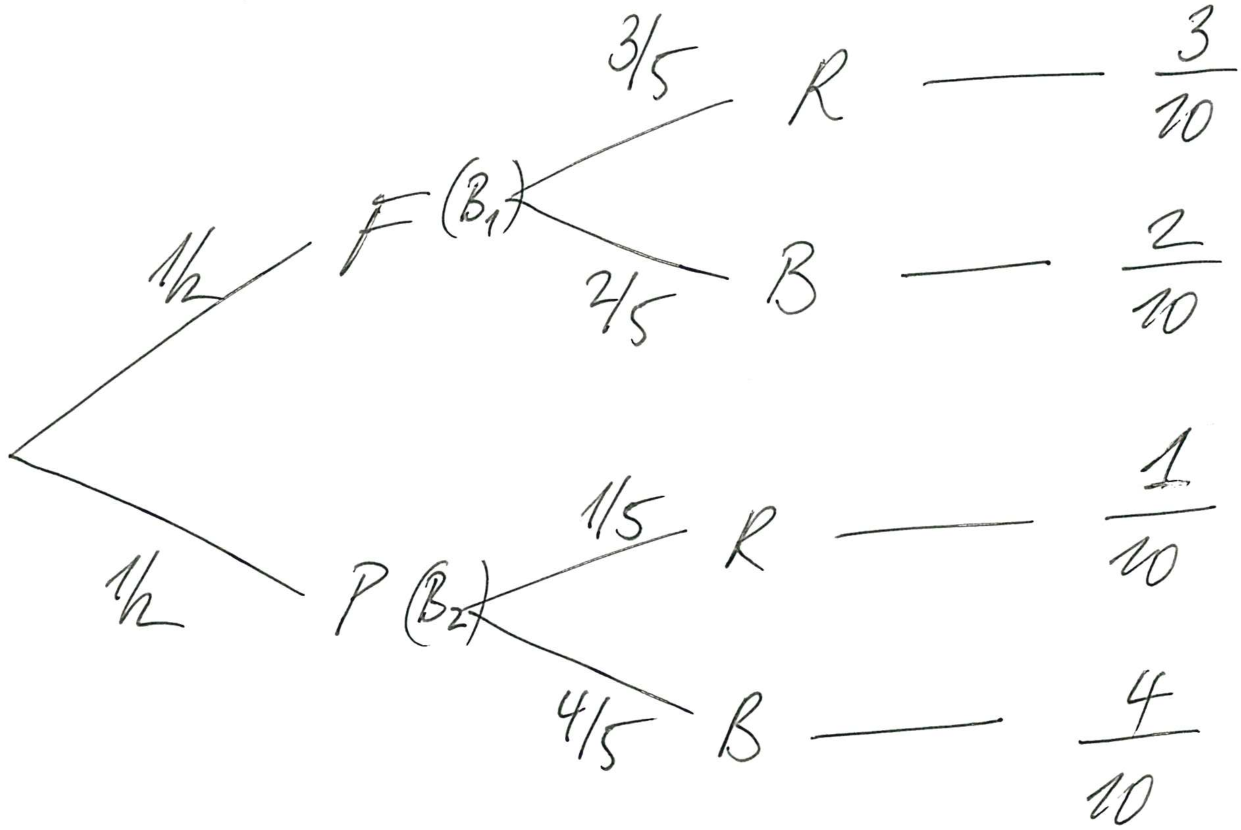
$\boxed{B}$ (a)



(b) $p(N) = 0{,}3 + 0{,}\bar{3} = 0{,}6\bar{3} \simeq 63{,}3\ \%$

(c) $p(\text{II si usagée}) = \dfrac{0{,}1\bar{6}}{0{,}2+0{,}1\bar{6}} \simeq \dfrac{16{,}7}{36{,}7}$

$\boxed{4.29}$



$$P(B_1 \text{ și } R) = \frac{P(B_1 \,\&\, R)}{P(R)}$$

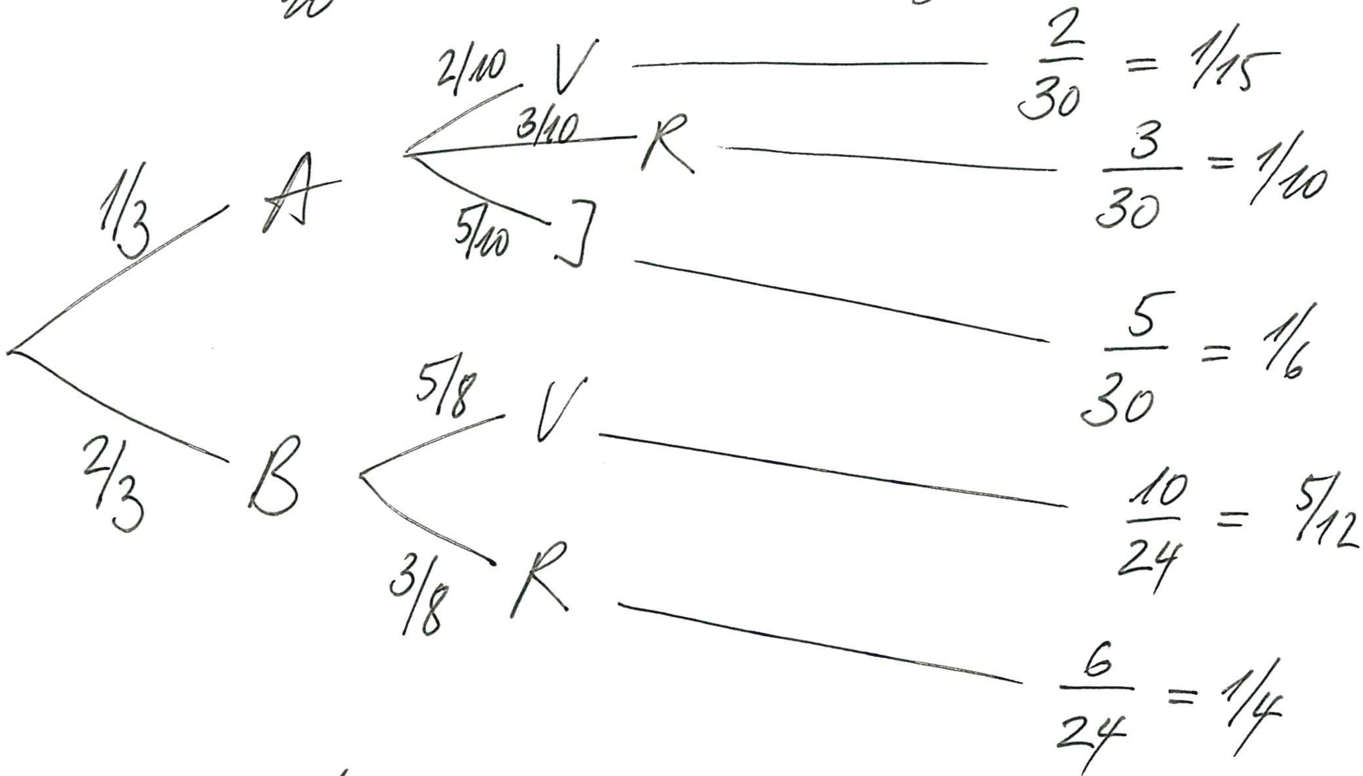
$$= \frac{3/10}{3/10 + 1/10} = \frac{3}{10} \cdot \frac{10}{4} = \frac{3}{4} = 75\%$$

$\boxed{4.30}$

$p < 3 : 1, 2$

$p \geq 3 : 3, 4, 5, 6$

$A: \underbrace{2V \quad 3R \quad 5J}_{10}$ / $B: \underbrace{5V \quad 3R}_{8}$



a) $p(V) = \frac{1}{15} + \frac{5}{12} = \frac{29}{60} \simeq 48,3\%$

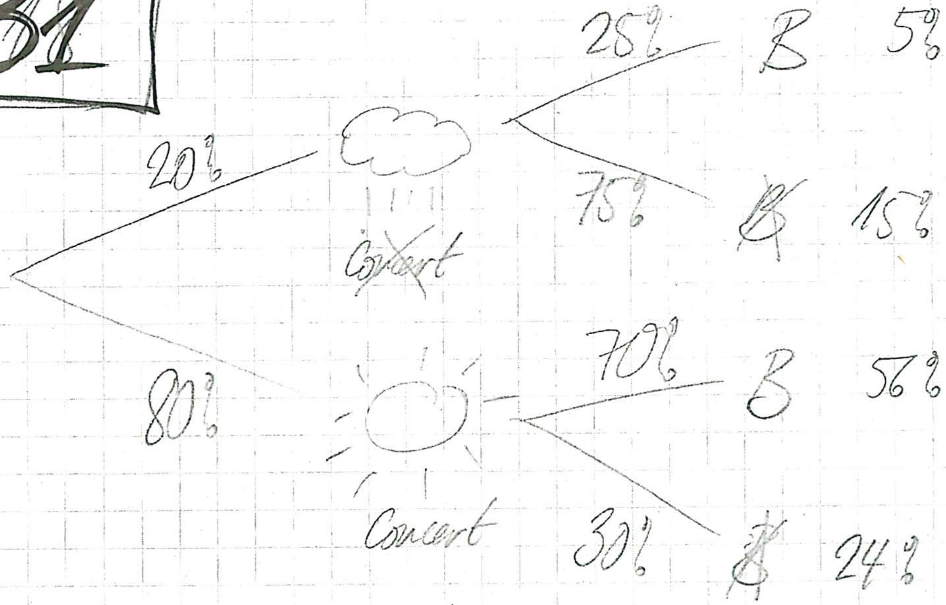
b) $p(V \text{ și } p \geq 3) = 5/8 = 62,5\%$

c) $p(p < 3 \text{ și } R) = \frac{1/10}{1/10 + 1/4} = \frac{1}{10} \cdot \frac{20}{7} = \frac{2}{7} \simeq 28,6\%$

d) $p(p \geq 3 \text{ și } J) = 0\%$

4.31

a)



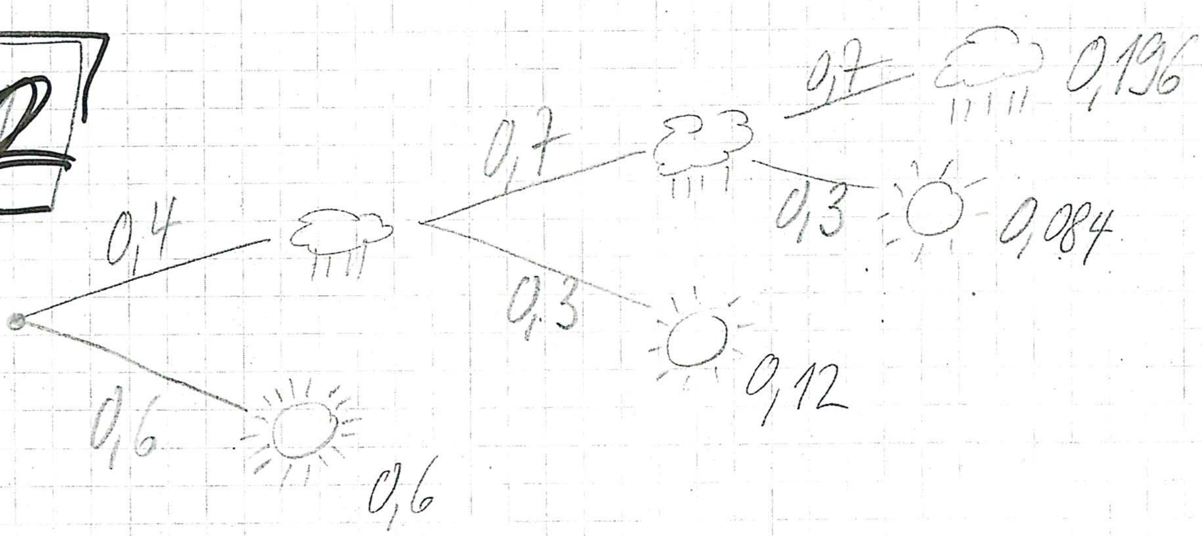
$p(B) = 5\% + 56\% = \underline{61\%}$

b) $p(\text{concert si bouchon}) = \dfrac{56\%}{61\%} \simeq$

Concert et bouchon

Bouchon

4.32

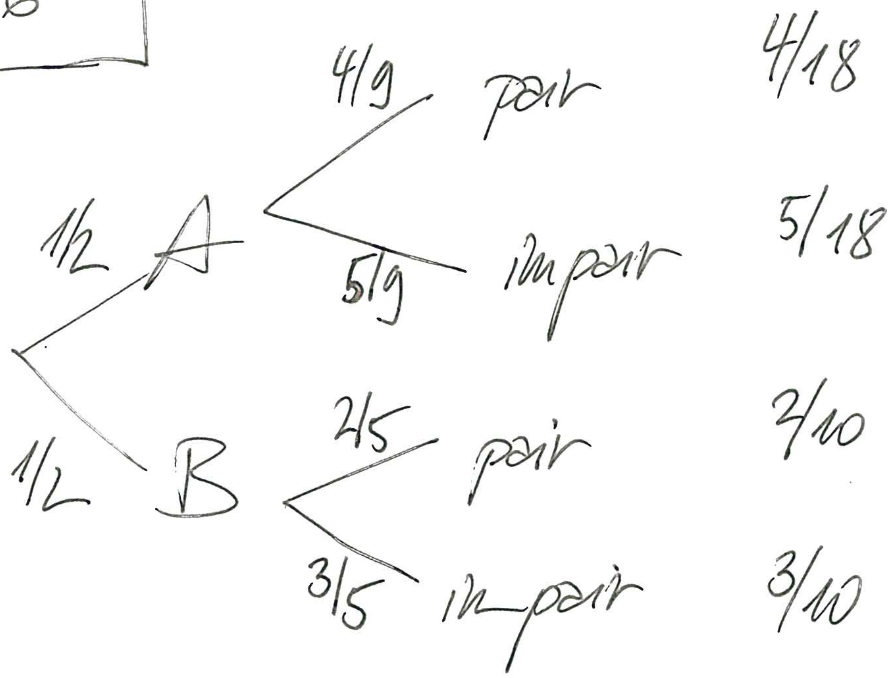


a) $p(\text{course annulée}) = 0{,}4 \cdot 0{,}7 \cdot 0{,}7 = 0{,}196$

b) $p(\text{course reportée au plus une fois}) = 0{,}6 + 0{,}12 = 0{,}72$

c) $p(\text{jour fixé si la course a eu lieu}) = \dfrac{0{,}6}{0{,}804} \simeq$

4.36



A: 1, 2, 3, 4, 5, 6, 7, 8, 9

4 pairs – 5 impairs

B: 1, 2, 3, 4, 5

2 pairs – 3 impairs

$$p(A \text{ si pair}) = \frac{p(A \text{ et pair})}{p(\text{pair})} = \frac{4/18}{4/18 + 2/10}$$

$$= \frac{2}{\cancel{9}_1} \cdot \frac{\cancel{45}^{5}}{19} = \frac{10}{19} \simeq \underline{52,63\,\%}$$

$\boxed{4.38}$

3E

1) a)

$2 \cdot 4 = 8$ cas favorables

$\Rightarrow p = \frac{8}{36} = \frac{2}{9}$

b) On fait le calcul pour l'événement complémentaire: aucun nombre pair.

$4 \cdot 2 = 8 \Rightarrow p(\cancel{pa}ir) = \frac{8}{36} = \frac{2}{9}$

$\Rightarrow p(\text{au moins 1 pair}) = \frac{7}{9}$

c) $\frac{2 \cdot 2 + 4 \cdot 4}{6 \cdot 6} = \frac{20}{36} = \frac{5}{9}$

3E

$\boxed{4.38}_2$

2) a)

	1	3	7	8	10	11
2	P	J	J	J	J	J
4		P				
5						
6			J	J		
9			P	P	J	J
12	P	P	P	P	P	P

J

P

$p(P) = \frac{17}{36}$ $p(J) = \frac{19}{36}$

b) D'après le dessin ci-dessus: $p(10/J) = \frac{5}{19}$