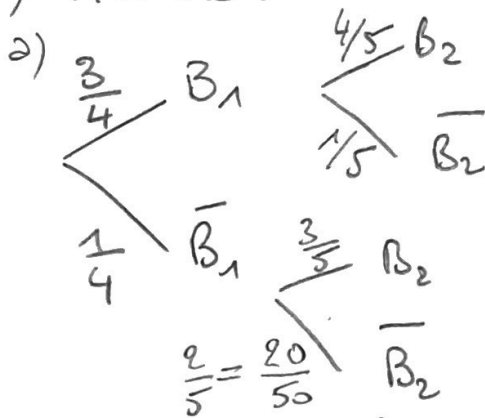


30 B 10 N

Equiprobabilité: pour chaque boule.
 $P(B_1) = \frac{30}{40} = \frac{3}{4}$

$$P_{B_1}(B_2) = \frac{40}{50} = \boxed{\frac{4}{5}}$$



D'après la formule des prob. totales

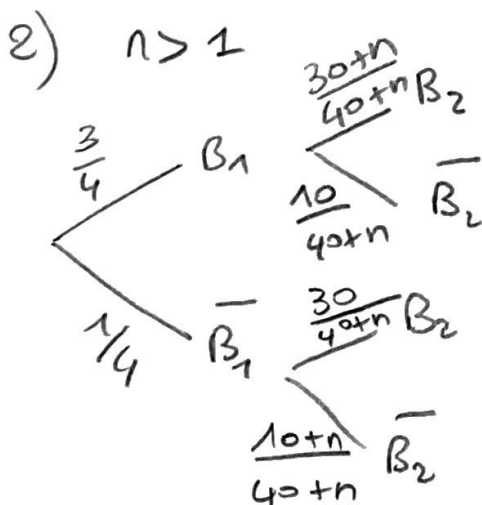
$$P(B_2) = P(B_1 \cap B_2) + P(\bar{B}_1 \cap B_2)$$

$$= \frac{3}{4} \times \frac{4}{5} + \frac{1}{4} \times \frac{3}{5} = \frac{3}{5} + \frac{3}{20} = \frac{15}{20} = \boxed{\frac{3}{4}}$$

$$b) P_{B_2}(B_1) = \frac{P(B_1 \cap B_2)}{P(B_2)} = \frac{\frac{3}{4} \times \frac{4}{5}}{\frac{3}{4}} = \frac{\frac{3}{5}}{\frac{3}{4}} = \frac{3}{5} \times \frac{4}{3} = \boxed{\frac{4}{5}}$$

$$c) P(A) = P(B_1 \cap \bar{B}_2) + P(\bar{B}_1 \cap B_2)$$

$$= \frac{3}{4} \times \frac{1}{5} + \frac{1}{4} \times \frac{3}{5} = \frac{3}{20} + \frac{3}{20} = \frac{6}{20} = \boxed{\frac{3}{10}}$$



$$P(A) = P((B_1 \cap \bar{B}_2) \cup (\bar{B}_2 \cap B_1))$$

$$\text{On a } (B_1 \cap \bar{B}_2) \cap (\bar{B}_2 \cap B_1) = \emptyset$$

$$\text{donc } P(A) = P(B_1 \cap \bar{B}_2) + P(\bar{B}_2 \cap B_1)$$

$$= \frac{3}{4} \times \frac{10}{40+n} + \frac{1}{4} \times \frac{30}{40+n}$$

$$= \frac{60}{4(40+n)} = \boxed{\frac{15}{40+n}}$$

$$\text{Donc: } P(A) = \frac{1}{4}$$

$$P(A) = P$$

$$\Leftrightarrow \frac{15}{40+n} = \frac{1}{4}$$

$$\Leftrightarrow 40+n = 15 \times 4$$

$$\Leftrightarrow n = 60 - 40$$

$$\Leftrightarrow n = 20$$

$$\text{Pour } n = 20, P(A) = \frac{1}{4}$$