

Corrigé de : probabilités Gambling
Thème : MATHÉMATIQUES - ANGLAIS

CORRIGE DU SUJET 6

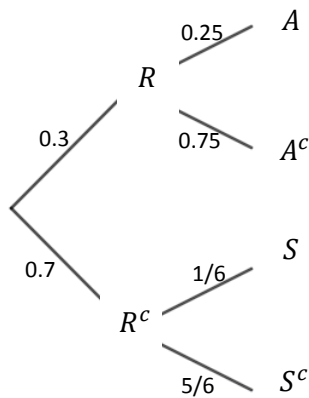
Main ideas of the text:

- Gambling is not new, it has existed for a long time.
- The fact that you can win a lot or even change your life leads some people to gamble. You can get a lot for nothing.
- There are differences according to age, social background or sex. In other words, men and women do not have the same behaviour, nor do old and young people.
- For instance, old people enjoy playing bingo or slot machines because they don't need to think a lot to win money.
- It is also said that women seem to be more sensible than men as they do not want to get into financial troubles. Men are more likely to take risks and they are also more impulsive.

Solution

1. First we are going to build a tree diagram

R : "getting a red marble" R^c : the complement of event R
 A : "getting an Ace" S : "getting 6"



$$P_R(A) = 0.25$$

$$2. P(\text{"winning a computer"}) = P(R \text{ and } A) = 0.3 \times 0.25 = 0.075$$

$$3. P(\text{"winning a prize"}) = P(R \text{ and } A) + P(R^c \text{ and } S) = 0.075 + 0.7 \times \left(\frac{1}{6}\right) = \left(\frac{23}{120}\right) \approx 0.1917$$

4. Let's call w the event : "winning a prize"

$$P_w(R) = \frac{P(w \text{ and } R)}{P(w)} = \frac{P(R \text{ and } A)}{P(w)} \approx \frac{0.075}{0.1917} \approx 0.3912$$