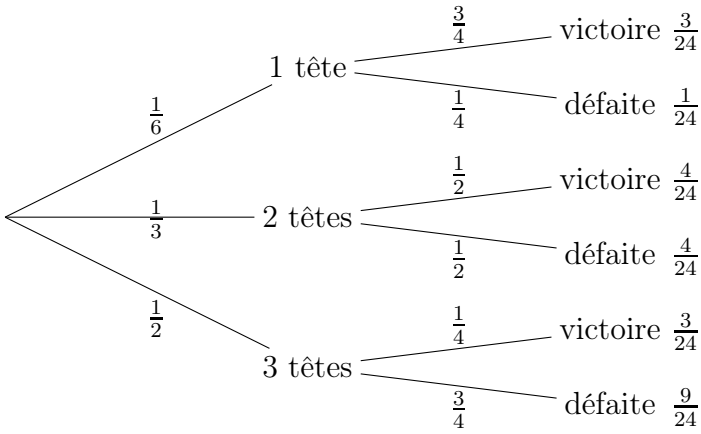
Chamblandes 2010 — Problème 7



a) $\frac{1}{6}\cdot\frac{3}{4}+\frac{1}{3}\cdot\frac{1}{2}+\frac{1}{2}\cdot\frac{1}{4}=\frac{1}{8}+\frac{1}{6}+\frac{1}{8}=\frac{3}{24}+\frac{4}{24}+\frac{3}{24}=\frac{10}{24}=\frac{5}{12}$

b) $\dfrac{\frac{1}{3}\cdot\frac{1}{2}+\frac{1}{2}\cdot\frac{1}{4}}{\frac{1}{6}\cdot\frac{3}{4}+\frac{1}{3}\cdot\frac{1}{2}+\frac{1}{2}\cdot\frac{1}{4}}=\dfrac{\frac{4}{24}+\frac{3}{24}}{\frac{3}{24}+\frac{4}{24}+\frac{3}{24}}=\dfrac{\frac{7}{24}}{\frac{10}{24}}=\frac{7}{10}$

c) $\dfrac{\frac{1}{6}\cdot\frac{3}{4}+\frac{1}{3}\cdot\frac{1}{2}}{\frac{1}{6}+\frac{1}{3}}=\dfrac{\frac{1}{8}+\frac{1}{6}}{\frac{1}{2}}=\dfrac{\frac{7}{24}}{\frac{1}{2}}=\frac{7}{12}$

d) $\mathrm{C}_3^5\left(\frac{5}{12}\right)^3\left(1-\frac{5}{12}\right)^{5-3}=10\cdot\frac{125}{1728}\cdot\frac{49}{144}=\frac{30\ 625}{124\ 416}\approx 24{,}62\ \%$