

FBRTL33

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1.

$$\mathbf{P}^2 = \begin{pmatrix} 0.5 & 0.3 & 0.2 \\ 0.7 & 0 & 0.3 \\ 0.5 & 0.5 & 0 \end{pmatrix} \begin{pmatrix} 0.5 & 0.3 & 0.2 \\ 0.7 & 0 & 0.3 \\ 0.5 & 0.5 & 0 \end{pmatrix} = \begin{pmatrix} 0.56 & 0.25 & 0.19 \\ 0.5 & 0.36 & 0.14 \\ 0.6 & 0.15 & 0.25 \end{pmatrix}$$

2.

$$N = (I - Q)^{-1} = \begin{pmatrix} 0.7 & -0.1 \\ -0.2 & 0.6 \end{pmatrix}^{-1} = \begin{pmatrix} 1.5 & 0.25 \\ 0.5 & 1.75 \end{pmatrix}$$

3.

$$P[\chi_{n+1} = j | \chi_n = i] = \begin{cases} \frac{N-i}{N} & \text{si } j = i + 1, \\ \frac{i}{N} & \text{si } j = i - 1, \\ 0 & \text{en otro caso.} \end{cases}$$

4.

$$r \mapsto \begin{cases} 0 & \text{si } r = 0; \\ 2 & \text{si } r = 4; \\ 1 & \text{en otro caso.} \end{cases}$$

5.

$$V_{R_w}(n, t) = \begin{cases} \binom{n}{0} + \binom{n}{1}(q-1) + \binom{n}{2}(q-1)^2 + \dots + \binom{n}{t}(q-1)^t & \text{si } 0 \leq t \leq n; \\ q^n & \text{si } n \leq t. \end{cases}$$