$$\pi[T_3(\rho) = t] = \begin{cases} 1 - \omega(1,3) & t = 0 \\ \omega(1,3)[1 - \omega(3,4)\omega(4,2)\omega(2,3)] & t = 1 \\ \omega(1,3)\omega(3,4)\omega(4,2)\omega(2,3) & t = 2 \end{cases}$$