

Calculo del limite en la cola conocida PN.

$$\mu = 5$$

$$\lambda = 6$$

$$\rho = \frac{6}{5} = 1,2$$

$$N=?$$

$$\lambda_{efec} = 4$$

$$\lambda_{efec} = \lambda * (1 - P_N)$$

Despejando PN

$$P_N = 1 - \frac{\lambda_{efec}}{\lambda} = 1 - \frac{4}{6} = \frac{1}{3}$$

$$P_N = \frac{1}{3}$$

$$p_n = \begin{cases} \frac{1 - \rho}{1 - \rho^{N+1}} \rho^n, & \rho \neq 1 \\ \frac{1}{N+1}, & \rho = 1 \end{cases} \quad n = 0, 1, 2, \dots, N \quad (M/M/1) : (DG/N/\infty)$$

$$\frac{1 - 1,2}{1 - 1,2^{N+1}} * 1,2^N = \frac{1}{3}$$

$$\frac{-0,2 * 1,2^N}{1 - 1,2^{N+1}} = \frac{1}{3}$$

$$3 * (-0,2) * 1,2^N = 1 - 1,2^{N+1}$$

$$-0,6 * 1,2^N = 1 - 1,2 * 1,2^N$$

$$-0,6 * 1,2^N + 1,2 * 1,2^N = 1$$

$$0,6 * 1,2^N = 1$$

$$1,2^N = \frac{1}{0,6}$$

$$\ln(1,2^N) = \ln\left(\frac{1}{0,6}\right)$$

$$N * \ln(1,2) = \ln\left(\frac{1}{0,6}\right)$$

$$N = \frac{\text{Ln}\left(\frac{1}{0,6}\right)}{\text{Ln}(1,2)} = 2,80 \cong 3$$