$$\frac{\mathrm{d}G_{\infty}}{\mathrm{d}n}=\frac{1}{\left(1-e^{-pn}\right)^{2}}\cdot\left\{\left[1-e^{-pn}\right]\left[Q\left(n\right)-pR\left(n\right)+R'\left(n\right)\right]e^{-pn}\right.$$
$$\left.-\left[-\frac{Q\left(n\right)e^{-pn}}{p}+\frac{Q\left(0\right)}{p}+R\left(n\right)e^{-pn}-A\right]pe^{-pn}\right\}=0 \quad (1)$$