G/G/c Equations

$\rho = \lambda / c\mu$	Traffic intensity
$L = \lambda W$	Little's Law
$L_q = \lambda W_q$	Little's Law
$W = W_q + {}^{1}\!/_{\mu}$	
$P_b = {}^{\lambda}\!/_{c\mu} = \rho$	Busy probability for an arbitrary server
$r = {}^{\lambda}\!/_{\mu}$	Expected number of customers in service
$L = L_q + r$	
$p_0 = 1 - \rho$	G/G/1 empty-system probability
$L = L_q + (1 - p_0)$	G/G/1 combined result
$p_n = p_0 \prod_{i=1}^{n} \frac{\lambda_{i-1}}{\mu_i}$	Flow balance equation result

M/M/1 Equations

$p_n = p_0 \left(\frac{\lambda}{\mu} \right)^n$	Flow balance equation results
$p_0 = 1 - \rho$	
$p_n = (1 - \rho)\rho^n$	
$L = \frac{\rho}{1 - \rho} = \frac{\lambda}{\mu - \lambda}$	Measures of Effectiveness
$L_q = \frac{\rho^2}{1 - \rho} = \frac{\lambda^2}{\mu(\mu - \lambda)}$	
$L_q' = \frac{1}{1 - \rho} = \frac{\mu}{\mu - \lambda}$	
$W = \frac{L}{\lambda} = \frac{\rho}{\lambda(1 - \rho)} = \frac{1}{\mu - \lambda}$	
$W_q = \frac{L_q}{\lambda} = \frac{\rho}{\mu(1 - \rho)} = \frac{\rho}{\mu - \lambda}$	