Example 6.1

Q: $\mu = 10$ parts/h $b = 2$ $\lambda = 4$ batches/h

U? L? Q? W? D?

Solution

$$U = \rho = \frac{b\lambda}{\mu} = \frac{2 \times 4}{10} = 0.8$$

$$L = \frac{\rho(1+b)}{2(1-\rho)} = \frac{0.8(1+2)}{2(1-0.8)} = \frac{2.4}{0.4} = 6$$

$$Q = L - \rho = 6 - 0.8 = 5.2$$

$$W = \frac{L}{\lambda b} = \frac{6}{4 \times 2} = \frac{3}{4} = 0.75$$

$$D = W - \frac{1}{\mu} = \frac{3}{4} - \frac{1}{10} = \frac{30-4}{40} = \frac{26}{40} = \frac{13}{20} = 0.65$$