Chew Calvin A19MJ0023

Q1) $T_N = T_1 (N)^m$

$T_{7th} = 53$

$12th = 49$

$49 = 53 \left(\frac{12}{7}\right)^m$

$0.9245 = \left(\frac{12}{7}\right)^m$

$\ln 0.9246 = m \ln \frac{12}{7}$

$m = -0.1456$

$-0.1456 = \frac{\ln x}{\ln 2}$

$x = 0.90398$

$LR = 90.4\%$

$T_{37} = T_1 (N)^m$ -0.1456

$T_{37} = 53 \left(\frac{37}{7}\right)$

$= 41.59 \text{ min}$

With the cycle time decrease, the nombor of cycle will inclease. This is due to the worke or operator as gain experience or more expertise when executed their task. This will decrease the working time.

Q2)

Capacity of each aisle $= 2 \times 50 \times 12$

$= 1200$

total capacity $= 1200 \times 4$

$= 4800$

$W = 3 \times (x + a)$

$L = n_y \times (y + b)$

$H = n_z \times (z + c)$

$W = 3 \times (42 + 6)$

$= 144$ in

$L = 50 \times (48 + 8)$

$= 2800$ in

$H = 12 \times (36 + 10)$

$= 552$ in

by considering specific dimension, the capacity is 4800. The system dimension will depend on how the 4 aisle are arranged with the facility.