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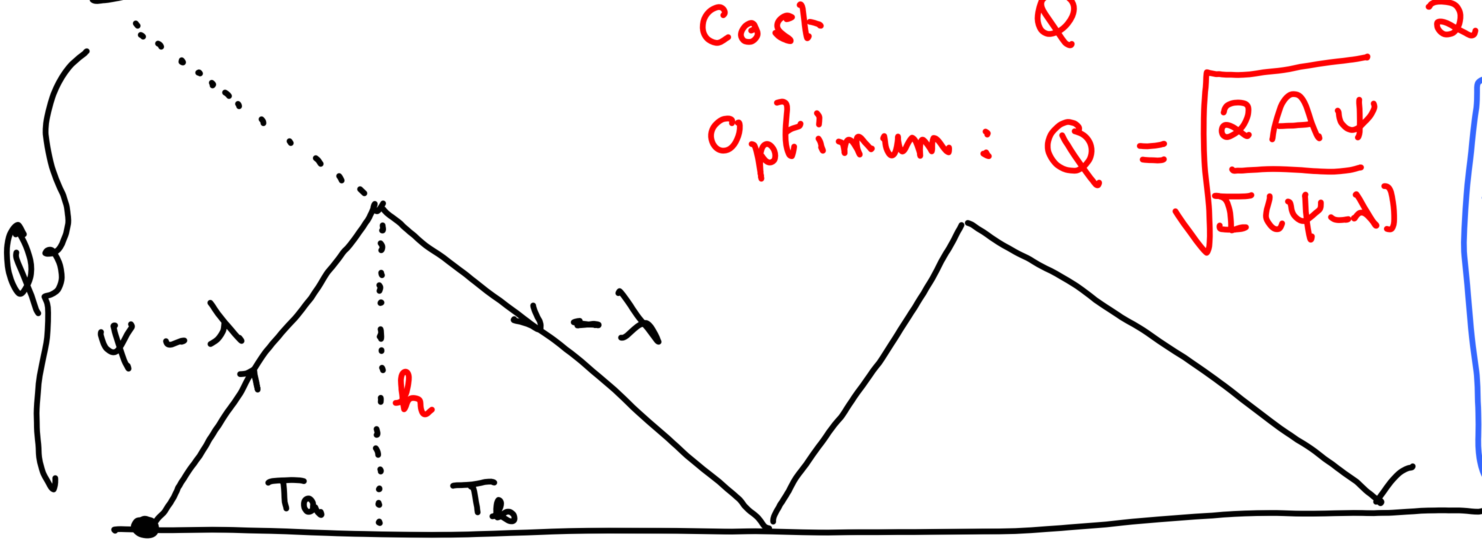
Model 3



Same costs: A & I

Goods arrive at rate ψ

Q determines everything.

Costs

Order, Inventory

$$\text{Total Cost} = \frac{A\lambda}{Q} + I\,\frac{Q(\psi-\lambda)}{2\psi}$$

Optimum: $Q = \sqrt{\dfrac{2A\psi}{I(\psi-\lambda)}}$

$\psi \to \infty$ Wilson Lot-Size Formula

(i) $h = \lambda T_b$

(ii) $h = (\psi-\lambda) T_a$

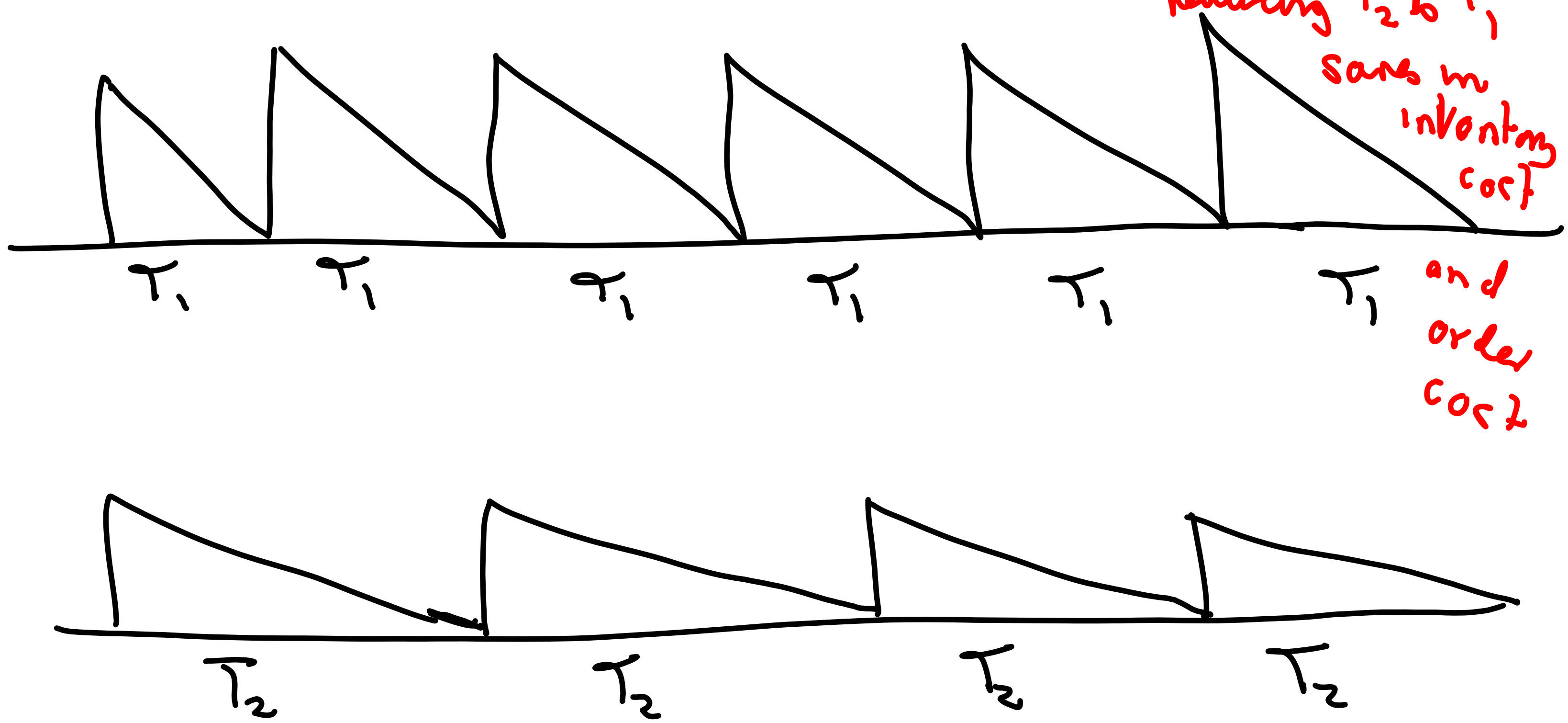
(iii) $T_a + T_b = \frac{Q}{\lambda}$

$$\frac{h}{\lambda} + \frac{h}{\psi-\lambda} = \frac{Q}{\lambda}; \quad h = \frac{Q(\psi-\lambda)}{\psi}$$

Model 4

Suppose there n different items to be handled.

Costs: A ; inventory cost I_j



People have $T_1 = T_2 = \cdots$

If $T_2 > T_1$ then reducing T_2 to T_1 saves in inventory cost and order cost

Now we just have to choose T:

Order $\qquad\qquad$ Inventory

$$\frac{A}{T} + \sum_{j=1}^{n} \frac{\lambda_j I_j T}{2}$$

Choose T to minimize.