

m is the number of tasks

n is the number of stages per task

t is the time required to complete a stage

$$T_{seq} = m \cdot \sum_{i=1}^n t_i$$

If all n stages take the same time t , then

$$T_{seq} = m \cdot n \cdot t$$

$$T_{pipe} = (m - 1) \cdot t + n \cdot t$$

$$S = \frac{T_{seq}}{T_{pipe}} = \frac{m \cdot n \cdot t}{(m-1) \cdot t + n \cdot t} = \frac{m \cdot n}{(m-1) + n}$$

$$\lim_{m \rightarrow \infty} \frac{m \cdot n}{(m-1) + n} = n$$