

1) 时钟周期至少应为  $2.1 \text{ ns}$ .

$$2) S \approx \frac{T_{\text{pipe}}}{T_{\text{cycle}}} = \frac{2.1 \text{ ns}}{7 \text{ ns}} = 0.3$$

$$3) S = \frac{T_{\text{pipe}}}{T_{\text{cycle}}} \times \frac{\text{CPI pipe}}{\text{CPI cycle}}$$

$$= \lim_{n \rightarrow +\infty} \frac{\frac{T_{\text{cycle}}}{n} + 0.1}{T_{\text{cycle}}} \times 1 \quad (n \rightarrow +\infty \text{ 是否可认为指令总数 } N \text{ 仍远大于 } n?)$$

$$\approx \lim_{n \rightarrow +\infty} \left( \frac{1}{n} + \frac{1}{70} \right) = \frac{1}{70}$$