

hw 7

1. 1) $T_{\text{cycle}} = 2 + 1 \cdot 1 = 2.1 \text{ ns}$.

2) $S = \frac{T_{\text{pipe}}}{T_{\text{cycle}}} \times \frac{\text{CPI}_{\text{pipe}}}{\text{CPI}_{\text{cycle}}} = \frac{7}{2.1} \times \frac{N+4}{N} \approx 3.33 \text{ (} N \rightarrow \infty \text{).}$

3). $\Leftrightarrow N \rightarrow \infty$. $\Rightarrow \text{CPI}_{\text{pipe}} \approx \text{CPI}_{\text{cycle}}$.

$$T_{\text{cycle}} \geq T_{\text{cycle}} = 0.1$$

$$\Rightarrow S_{\max} = \frac{7}{0.1} = 70.$$