

4.4 第七周

1. (1) $T_{\text{cycle}} = \max\{\text{IF}, \text{ID}, \text{EX}, \text{MEM}, \text{WB}\} + T_{\text{st}} = 2.1 \text{ ns}$

(2) 加速比 $S \approx \frac{T_0}{T_{\text{cycle}}} = \frac{7}{2.1} \approx 3.33$

(3) 设流水线共 K 级 则 $S' = \lim_{K \rightarrow \infty} \frac{7}{(\frac{7}{K} + 0.1)} = 70$

\therefore 加速比极限为 70

