

作业7

题1

$$T_{old} = 7 \text{ ns}$$

1) 流水化后的周期 $T_{new} = (2 + 0.1) \text{ ns} = 2.1 \text{ ns}$

2) 加速比 $S = \frac{T_{old} \cdot CPI_{old}}{T_{new} \cdot CPI_{new}} \approx \frac{T_{old}}{T_{new}} = \frac{7}{2.1} \approx 3.3$

3) 若有无限多流水级 $T_{new} \rightarrow 0.1 \text{ ns}$

$$S \approx \frac{T_{old}}{T_{new}} \rightarrow 70$$

即加速比极限为 70