

1. (1) 流水化后 $T = t_{\max} + t_{\text{延}} = 2 + 0.1 = 2.1 \text{ ns}$

(2) $S = \frac{T_{\text{old}}}{T_{\text{new}}} = \frac{7}{2.1} = \frac{10}{3}$

(3) 无限多流水级 寄存器间 $t_{\max} \rightarrow 0$ $T = t_{\max} + t_{\text{延}} \rightarrow 0.1 \text{ ns}$

加速比极限 $S = \frac{7}{0.1} = 70$

