1. (1) 流水化后的时钟周期应为 $2nS + 0.1nS = 2.1nS$.

(2) 当执行的指令数量足够大时, $S = \dfrac{N+k-1}{N} \times \dfrac{T_{pipe}}{T_{cycle}} = \dfrac{2.1nS}{7nS} = 0.3$

加速比 $\dfrac{1}{S} = \dfrac{10}{3}$

(3) 若有无限多个流水级, 则 $T_{pipe} = T_{delay} = 0.1nS$.

指令总数 N 足够大时, 仍有 $\dfrac{CPI_{pipe}}{CPI_{cycle}} = \dfrac{N+k-1}{N} \approx 1$.

则 $S \approx \dfrac{T_{pipe}}{T_{cycle}} = \dfrac{0.1nS}{7nS} = \dfrac{1}{70}$, 加速比 $\dfrac{1}{S} = 70$.