1. (1) $T_{pipe} = \max(T_{delay}) + T_{reg} = 2.1ns$

(2) 当执行N条指令，N足够大时

$$S = \lim_{N\to\infty} \frac{T_{old}}{T_{new}} = \lim_{N\to\infty} \frac{7ns \cdot N}{T_{pipe} \cdot CPI \cdot N} = \frac{\lim 7ns(N)}{2.1ns \times (N+5-1)} \approx 3.33$$

(3) 当无限分级

$(T_{pipe})_{min} \approx T_{reg} = 0.1ns$

$$S_{lim} = \frac{7ns}{0.1ns} = 70$$