解：1) 时钟周期应为最长的一个阶段执行时间加延迟

$\therefore T_{pipe} = 2ns + 0.1ns = 2.1ns$

2) $S = \frac{T_{pipe}}{T_{cycle}} \times \frac{CPI_{pipe}}{CPI_{cycle}} = \frac{2.1}{7} \times \frac{N+5-1}{N} = 0.3\frac{N+4}{N}$

3) $T_{pipe} \approx \frac{7}{k} + 0.1$

$\therefore S = \frac{T_{pipe}}{T_{cycle}} \times \frac{CPI_{pipe}}{CPI_{cycle}} = \frac{\frac{7}{k}+0.1}{7} \times \frac{N+k-1}{N}$

$\lim\limits_{\substack{N\to\infty \\ k\to\infty}} S = \lim\limits_{\substack{N\to\infty \\ k\to\infty}} \frac{\frac{7}{k}+0.1}{7} \times \frac{N+k-1}{N} = \frac{1}{35}$

$\therefore$ 获得35倍加速.