1. (1) $T_{pipe} = T_{reg} + \max(T_{exe})$

$= T_{reg} + T_{mem} = 2.1ns$

(2) $S = \frac{T_{cycle}}{T_{pipe}} \cdot \frac{CPI_{cycle}}{CPI_{pipe}} \approx \frac{T_{cycle}}{T_{pipe}}$

$= \frac{7ns}{2.1ns} = 3.33$

∴加速比为3.33

(3) $S \approx \frac{T_{cycle}}{T_{pipe}} = \frac{T_{cycle}}{T_{reg} + \lim_{n\to\infty} \frac{T_{cycle}}{n}}$

$\approx \frac{T_{cycle}}{T_{reg}} = \frac{7ns}{0.1ns} = 70$

加速比极限为70.