Chapter 3

解：(1) $T_{pipe} = T_{MEM} + \Delta T = 2.1ns$

(2) 设N条指令，$S = \frac{T_{pipe}}{T_{cycle}} \times \frac{CPI_{pipe}}{CPI_{cycle}} = \frac{2.1ns}{7ns} \times \frac{N+4}{N} = 0.3(1+\frac{4}{N})$ N很大时 $S \to 0.3$ 加速比为3.3

(3) K很大时，$T_{pipe} \approx 0.1ns$ $S = \frac{0.1ns}{7ns} \times \frac{N+K-1}{N} = \frac{1}{70}(1+\frac{K-1}{N})$ $\frac{1}{S} = 70\frac{1}{1+\frac{K-1}{N}}$，N很大时加速比为35