

(1)7.5ns

(2)5

(3) $S = (((7.5/N) + 0.1)/7.5) * ((2N - 1)/N) = (0.2N^2 - 14.9N - 7.5)/7.5N^2 = 2/75 (N \rightarrow \text{正无穷})$ , 所以  
加速比为 37.5