

## 2x2 tableau construction:

### Work:

$$T_1(n) = 4T_1(n/2) + O(1).$$

$$a=4, b=2$$

$$O(1)=f(n)=O(n^{\log_b a-e}), \text{ constant } e>0 \Rightarrow T_1(n)=O(n^{\log_b a-e})=O(n^{\log_2 4})=O(n^2).$$

### Span:

$$T_\infty(n)=3T_\infty(n/2)+O(1).$$

$$a=3, b=2$$

$$O(1)=f(n)=O(n^{\log_b a-e}), \text{ constant } e>0 \Rightarrow T_\infty(n)=O(n^{\log_b a})=O(n^{\log_2 3})=O(n^{\lg 3}).$$

$$\text{Parallelism} = (\text{Work} / \text{Span}) = O(n^2) / O(n^{\lg 3}) \sim O(n^2) / O(n^{1.58}) \sim O(n^{0.42}).$$

## 4x4 tableau construction:

### Work:

$$T_1(n) = 16T_1(n/4) + O(1).$$

$$a=16, b=4$$

$$O(1)=f(n)=O(n^{\log_b a-e}), \text{ constant } e>0 \Rightarrow T_1(n)=O(n^{\log_b a-e})=O(n^{\log_4 16})=O(n^2).$$

### Span:

$$T_\infty(n)=7T_\infty(n/4)+O(1).$$

$$a=7, b=4$$

$$O(1)=f(n)=O(n^{\log_b a-e}), \text{ constant } e>0 \Rightarrow T_\infty(n)=O(n^{\log_b a})=O(n^{\log_4 7}).$$

$$\text{Parallelism} = (\text{Work} / \text{Span}) = O(n^2) / O(n^{\log_4 7}) \sim O(n^2) / O(n^{1.40}) \sim O(n^{0.60}).$$