

# Landscape of running times

(Showing some representative examples)

## Sublogarithmic

- $\Theta(\sqrt{\log n})$
- $\Theta(\log \log n)$
- $\vdots$

## Polylogarithmic

- $\Theta(\log n)$  [Logarithmic]
- $\Theta(\log^2 n)$
- $\Theta(\log^3 n)$
- $\vdots$

## Polynomial

- $\Theta(n)$  [Linear]
- $\Theta(n \log n)$
- $\Theta(n^2)$  [Quadratic]
- $\Theta(n^2 \log n)$
- $\Theta(n^3)$  [Cubic]
- $\vdots$

## Exponential

- $\Theta(1.1^n)$
- $\Theta(2^n)$
- $\Theta(10^n)$
- $\vdots$

## Superexponential

- $\Theta(2^{n^2})$
- $\Theta(n!)$
- $\vdots$

Sublinear  
Super polylogarithmic  
 $\Theta(\sqrt{n})$   
 $\Theta(2^{\sqrt{\log n}})$

Superpolynomial  
Subexponential  
 $\Theta(2^{\log^2 n}) = \Theta(n^{\log n})$