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- Algo complexity (Big-O)
- Number Systems
- Intro to Pointers
- Pass-by-value
  - by-reference
  - by-pointer

## Algorithms

### Pre and Post Conditions

I Pre Condition - input specs

e.g. a)  $\text{sqrt}(n)$   
 $n \geq 0$

b)  $\text{bubbleSort}(\text{arr}, n)$   
 arr is array  
 n is some int

II Post Condition - expected output

a) some real no.

b) array

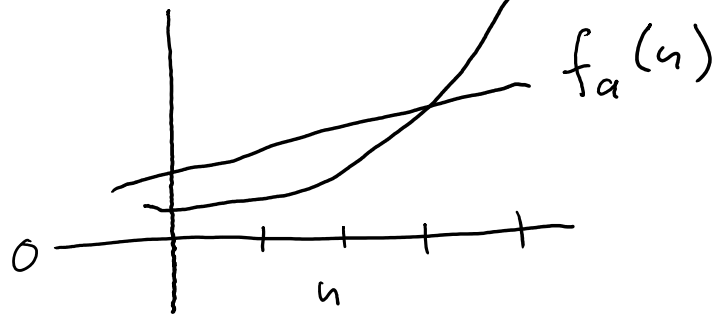
III Correctness - alg returns <sup>correct</sup> result  
 every time

I, II, and III are true:

IV Cost - memory usage and runtime  
e.g. can you read the whole  
file into array of structs?  
runtime: hard to estimate

Big-O - worst case algo performance  
- theoretical upper bound

a) find element in array length  $n$   
 $O(n)$



b) compare every element against  
every other element

$$O(n^2)$$