Vize Çözümleri

1) What are the worst cases of the algorithms given below
a) computing the sum of n numbers?
b) computing n!
c) finding the largest element in a list of n numbers.
(Exercises 2.1 kitapta)

a) n sayısının çok büyük olması
b) 10^3 ten büyük sayıların hesaplanmasının çok zor olması ve recursion olması
c) Listenin çok büyük olması

2) Find the big-O notation of the algorithm given by $f(n) = 100n + 5$.
a) for all $n \geq 5$
b) for all $n \leq 1$

You must find the C and $g(n)$ for both situations.

a) $f(x) \leq c \cdot g(x)$ $\quad \underline{n \geq 5}$

$100n + 5 \leq c \cdot g(x)$

$100n + 5 \leq 100n + n$

$100n + 5 \leq 101n$

$\quad g(x) = O(n)$

$\quad\quad C = 101$

b) $f(x) \leq c \cdot g(x)$ $\quad \underline{n \geq 1}$

$100n + 5 \leq c \cdot g(x)$

$100n + 5 \leq 100n + 5n$

$100n + 5 \leq 105n$

$\quad g(x) = O(n)$

$\quad\quad C = 105$

(Kitapta olan bir soru).

3) Prove that bubble sort uses a brute-force algorithm approach.
Algoritmayı açıklayarak kanıtlamak doğru cevap.

Algorithms

Choosing between Exact and Approximate Problem Solving
Exact solving generally have an exact formula.
Approximate solving Examples; Square root, evaluating definite integral
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