Algorithms: Practical 2 Complexity Analysis

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Exercise 1: Complete these sentences

1. Linear
2. T
3. F
4. Quadratic

Exercise 2: Order of Growth Classifications

T(N)	Growth Function
n^2	4
480	1
2^n	5
logN	2
2^4	1
380N	3
1/2N	3

T(N)	Growth Function
N logN	3
N^4	5
2^n	6
$\log_8 N$	2
$n\log_4 N$	3
$\log_2 N$	2
$n\log_6 N$	3
300	1
$6N^3$	4

1: Constant
$2n^3$: Polynomial
(4/3)n: Linear
2^n: Exponential
$4n^2$: Polynomial
5600: Constant
2493n: Linear
$3/2^n$: Exponential

Complexity of the functions:

O(n)

O(1)

O(n)

$O(n^2)$

O(n)

O(1)

$O(n^2)$

O(logn)

$O(n^3)$

Comparing two algorithms from different growth classes

ThreeSumA Big O estimation = n^3
ThreeSumB Big O estimation = n^2