

Problem set 1

Problem and exercise numbers are from CLRS 2nd edition. If you only owe the 3rd edition, and don't have access to the 2nd edition via library/friends, ask the instructor or the TA to match the problems between the editions.

Note that to *give an algorithm* means not only to describe the algorithm, but also to analyze its running time.

- Solve the recurrence $T(n) = aT(\frac{n}{b})$ for $a, b > 1$.
- Find u_n if $u_0 = 6, u_1 = 7, u_2 = 15, u_{n+3} = 2u_{n+2} + u_{n+1} - 2u_n$. That is, find an explicit formula for u_n as a function of n . (NB: exact formula, not asymptotic.)
- 2.3-7* (don't let the asterisk scare you), 2-4, 4.4-3*, 28.2-5, 28.2-6
- Study Section 15.2 "Matrix-chain multiplication"