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Algorithms, Recurrences and the Master Method - Sunday, January 31, 2021

For each question below: (1) Write a recurrence equation (given on question 4), (2) note the Master Method case (1, 2, or 3), and (3) solve for the asymptotic running time.

1. Merge sort

2. Binary search

3. Closest Pair Algorithm

4. $T(n) \leq 2T(n/2) + O(n^2)$

5. Recursive Matrix Multiplication Algorithm

6. Strassen's Matrix Multiplication Algorithm