Name:_____   Name: _____

Name:_____   Name: _____

Recurrences and the Master Method

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. $T(n) \leq 2T\left(\frac{n}{2}\right) + O(n^2)$

5. Karatsuba Multiplication

6. Recursive Matrix Multiplication Algorithm

7. Strassen's Matrix Multiplication Algorithm