Quiz 6: Recurrences and Suffix Trees

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1. A divide-and-conquer algorithm has runtime $r(n) = 8 \cdot r\left(\frac{n}{2}\right) + n^2$. Use the master theorem to find the runtime of the algorithm.

2. A divide-and-conquer algorithm has runtime $r(n) = 7 \cdot r\left(\frac{n}{2}\right) + 10n^2$. Use the master theorem to find the runtime of the algorithm.

3. Consider the string $S = \text{“banananas$”}$, where $S_0 = \text{“banananas$”}$, $S_1 = \text{“anananas$”}$, . . . What are $S_3$ and head$_3$?

4. Using your answer above, what does the suffix lemma guarantee about head$_4$?