CPS 130 Quiz 1
Recurrences

Write your answers on this sheet in the space provided.[1]

1. Prove using the *substitution method* that the recurrence $T(n) = 2T(n/2) + n$ has solution $T(n) = O(n \log n)$. Assume, as usual, that n is a power of 2 and $T(1) = 1$.

[1] Collaboration is NOT allowed and is severly penalized.

2. Using the *iteration method* find an asymptotic tight bound for the recurrence $T(n) = 7T(n/2) + n^3$. Assume, as usual, that n is a power of 2 and $T(1) = 1$.