

Ex 2.2.7: Show that the number of compares used by mergesort is monotonically increasing ($C(N+1) > C(N)$ for all $N > 0$).

Solution:

- $C(N) = C(\frac{n}{2}) + C(\frac{n}{2}) + n$
- $\equiv C(n) \log n$
- $2^k < n \leq 2^{k+1}$, therefore, monotonically increasing.