

$$t(n) = t(n/3) + t(2n/3) + n$$

$$\begin{array}{c}
 t(n) = \begin{array}{c} n \\ / \quad \backslash \\ t(n/3) \quad t(2n/3) \end{array} = \begin{array}{c} n \\ / \quad \backslash \\ n/3 \quad + \quad 2n/3 \\ / \quad \backslash \quad / \quad \backslash \\ t(n/9) \quad t(2n/9) \quad t(2n/9) \quad t(4n/9) \\ \vdots \end{array} = n
 \end{array}$$

Each level has at most n
 Depth of tree is $\leq \log_{3/2}(n)$ $\left\{ \begin{array}{l} \Rightarrow t(n) = O(n \log(n)) \\ \text{Guess, now prove.} \end{array} \right.$