Overview

• Binary Trees
• Quicksort
• Removal of a non-root node from a heap
Consider removing the node with the key 29 from the following heap.
Quick Sort

- The following diagram illustrate one step.

- Quick Sort is a hard-split, easy-join method.
Thus, in this case, Quick Sort takes $O(n \log n)$ steps.

Quick Sort (cont.)
In this case, Quick Sort takes $O(n^2)$ steps.

Quick Sort (cont.)
can be quite common in some applications. Used in practice, since it behaves well on the nearly-sorted case, which is often

- Take the median of the first, last, and middle elements. This is often

- Pick the first element (worst-case scenario) or a nearly-sorted or nearly-

Various strategies are used to choose the pivot. None is perfect.

Quick Sort (cont.)