

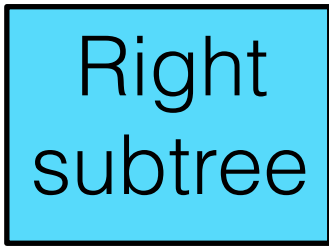
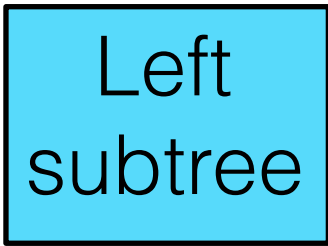
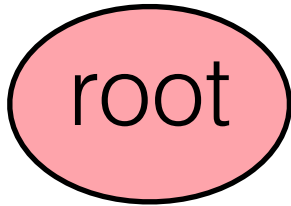
Pre-lecture

Lecture 31

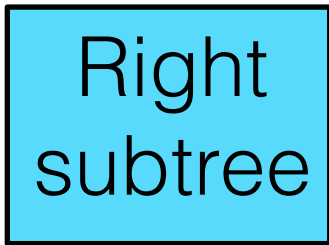
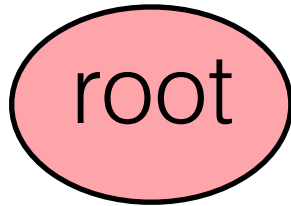
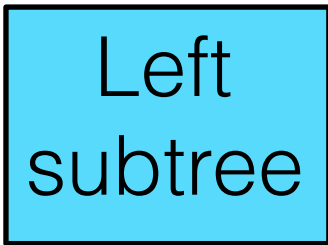
Traversal

- Systematic way of **visiting**/processing **all the nodes**
- **Methods**: Preorder, Inorder, and Postorder
- They **all** traverse the left subtree before the right subtree. It's all about the **position of the root**.

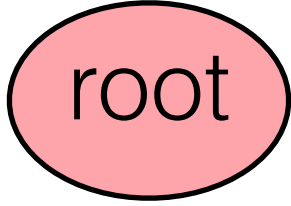
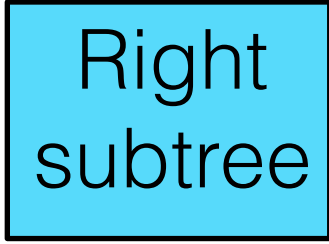
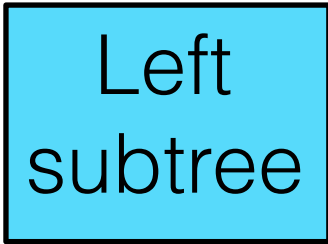
Preorder



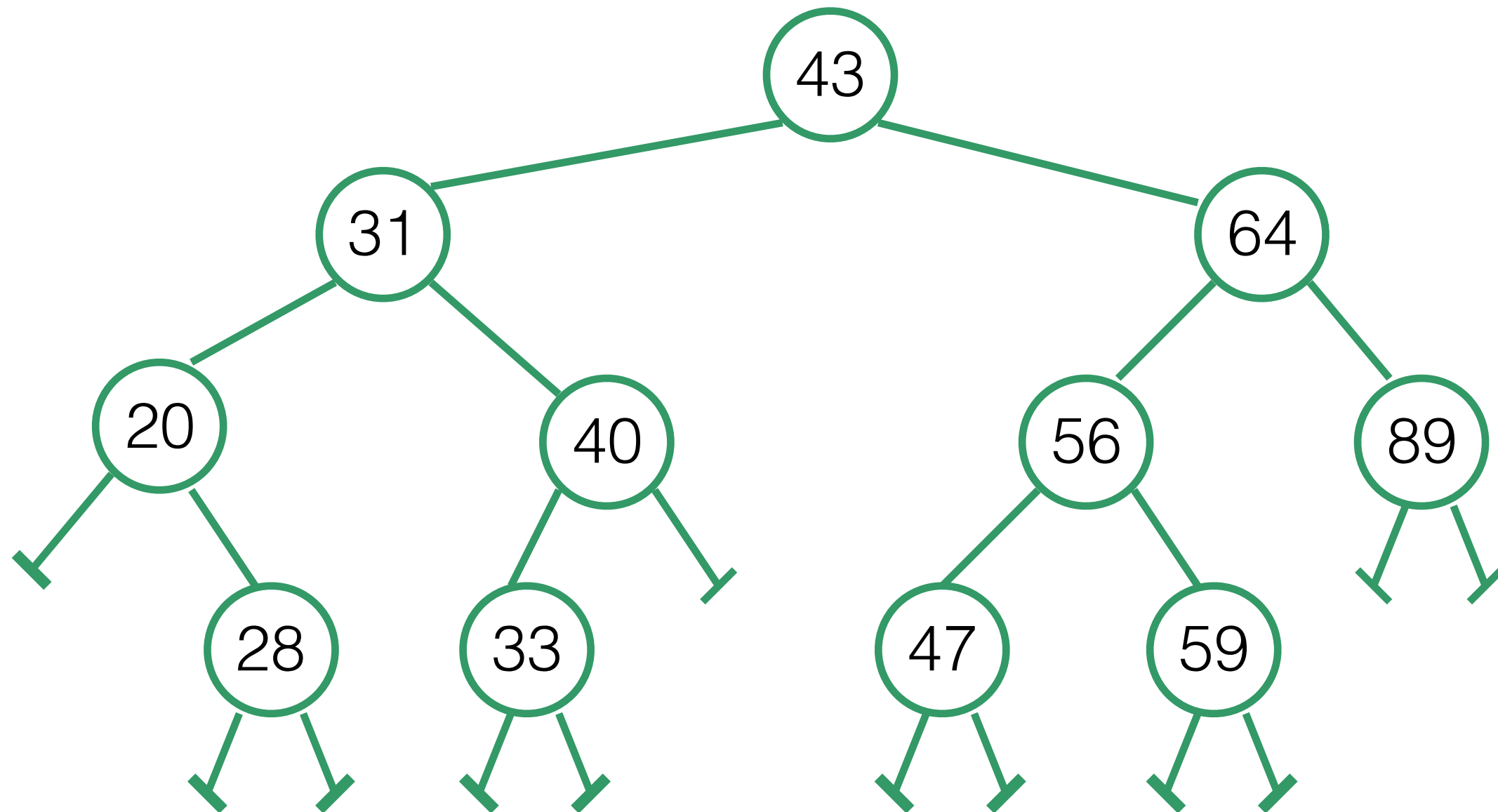
Inorder



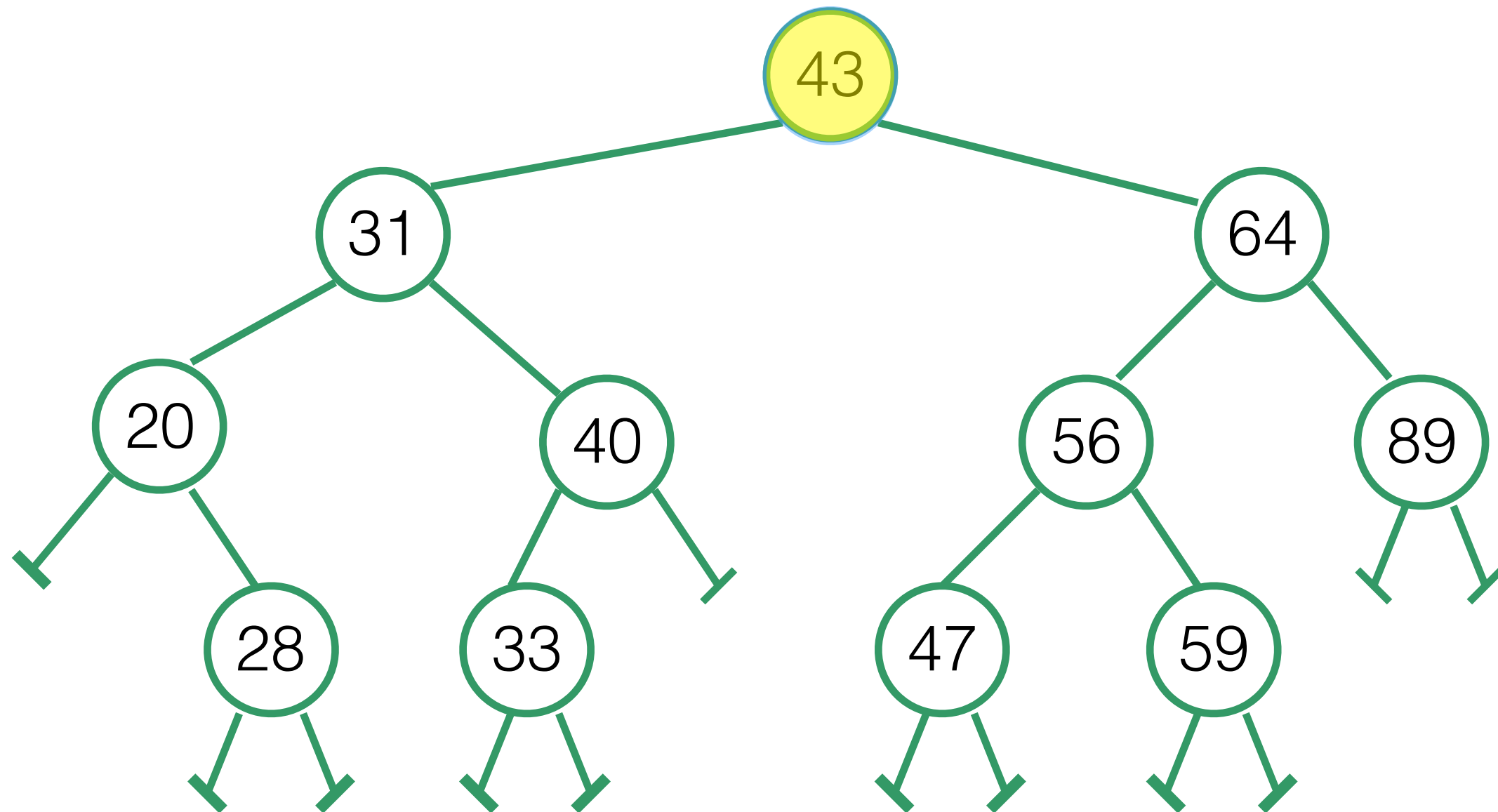
Postorder



Example: Preorder

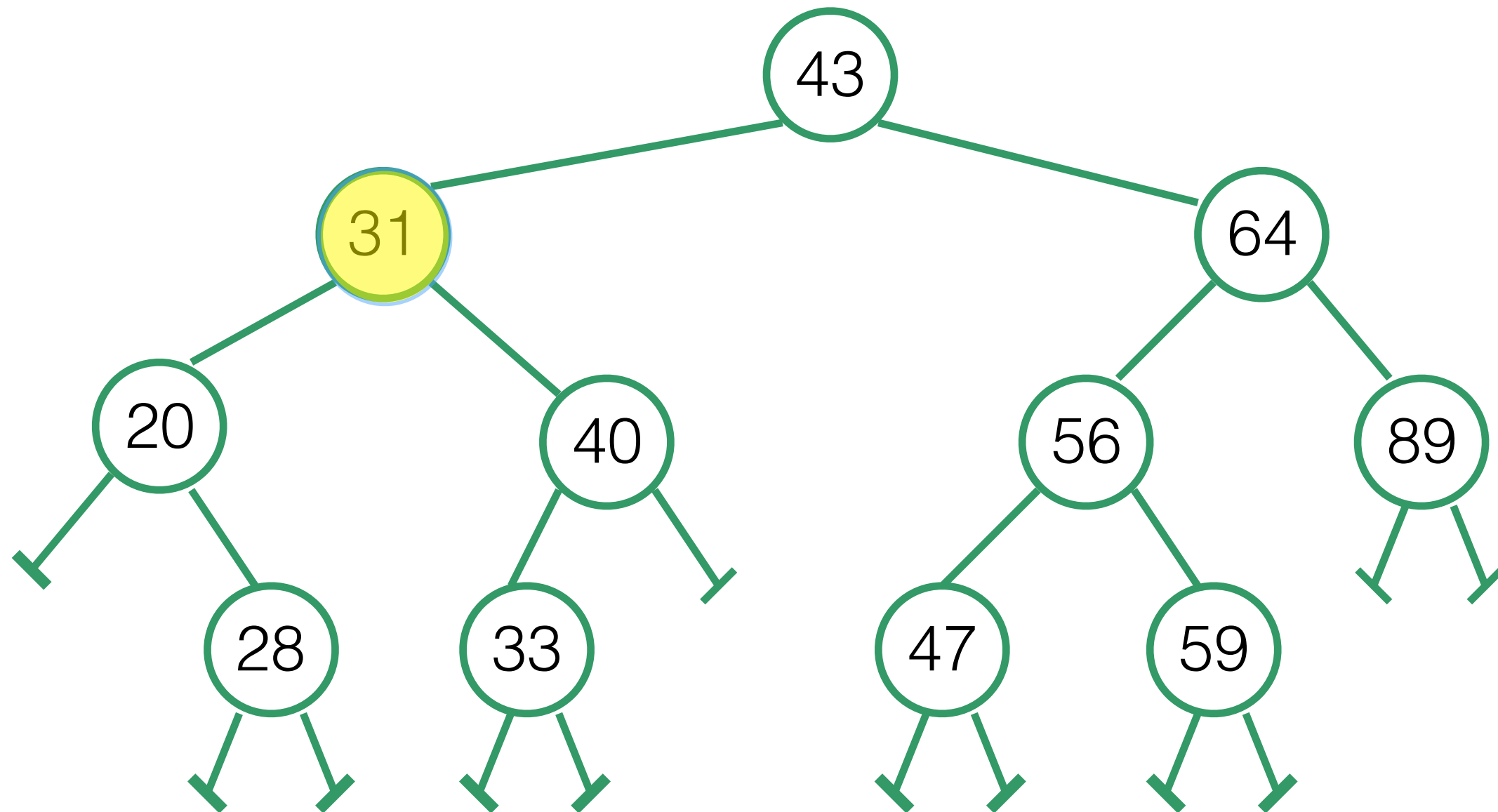


Example: Preorder



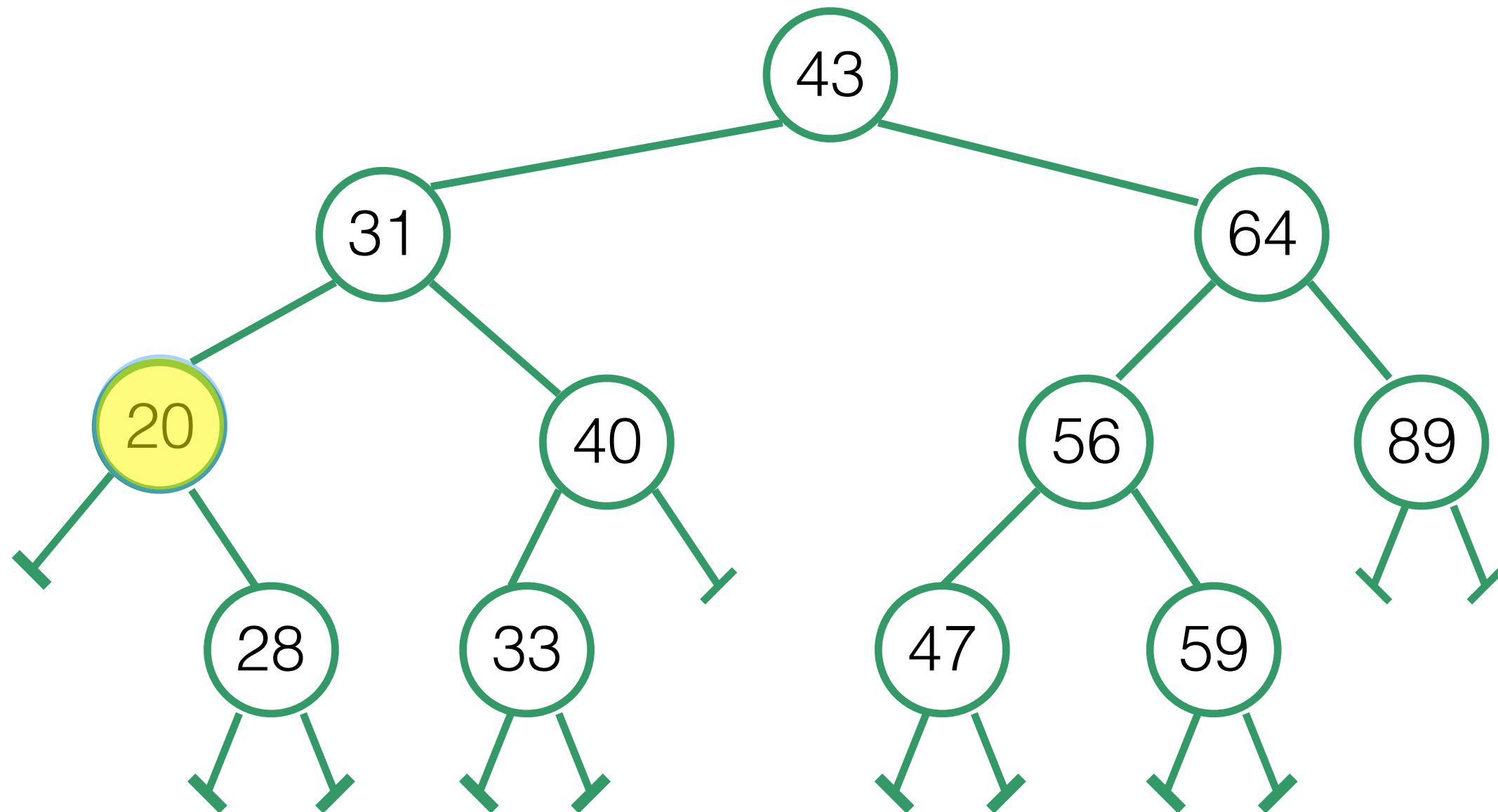
43

Example: Preorder



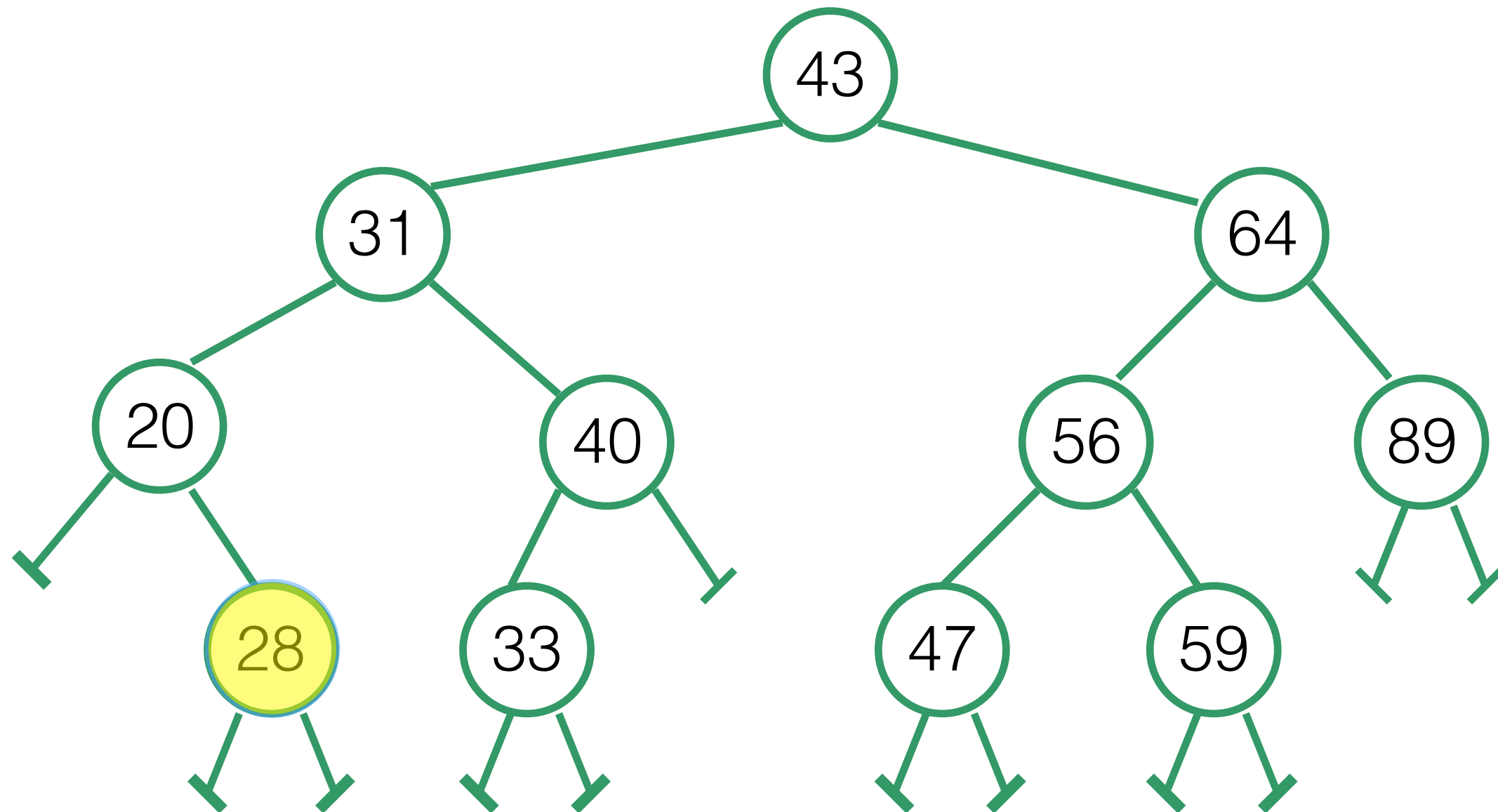
43	31
----	----

Example: Preorder



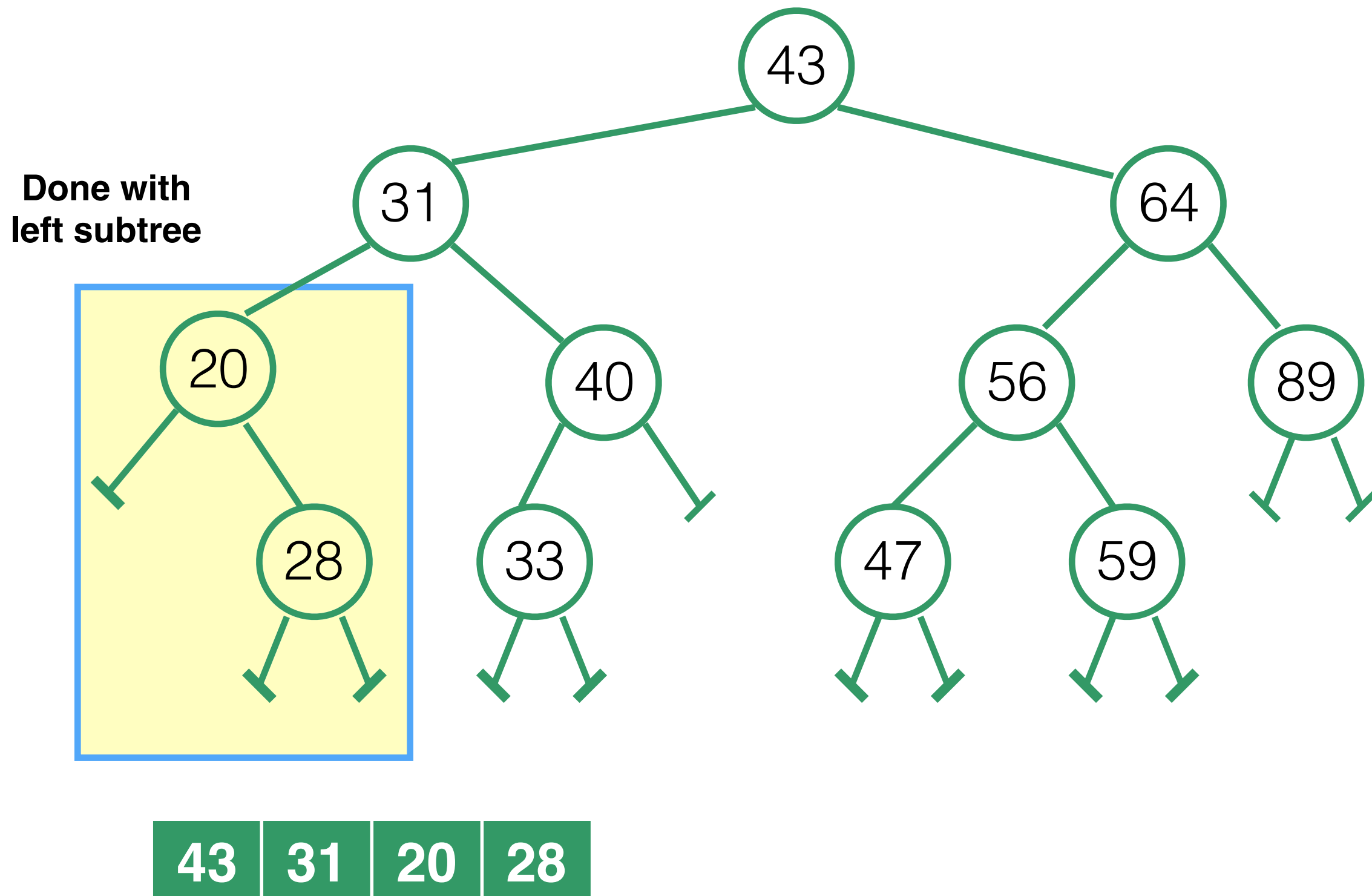
43	31	20
----	----	----

Example: Preorder

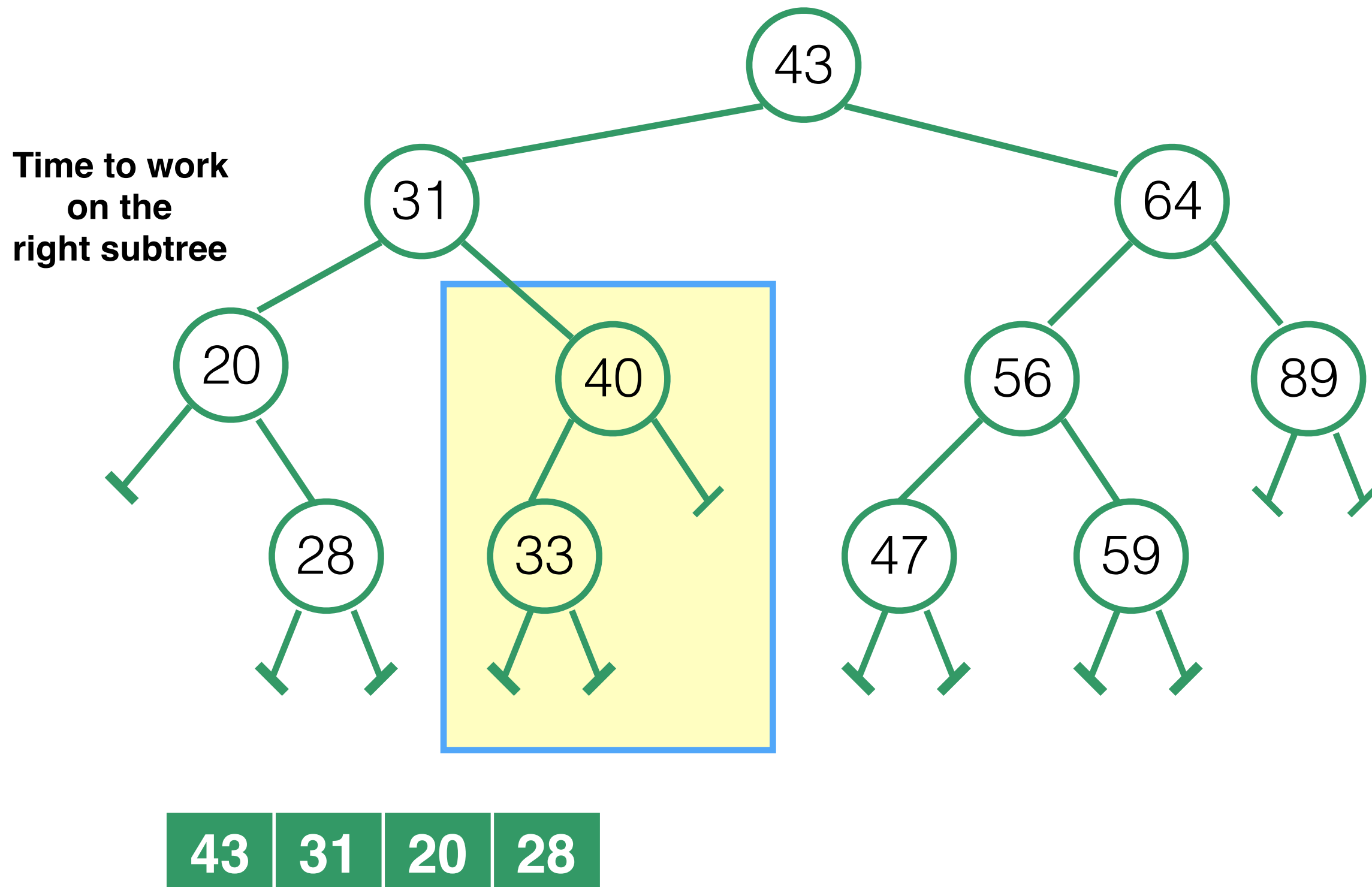


43	31	20	28
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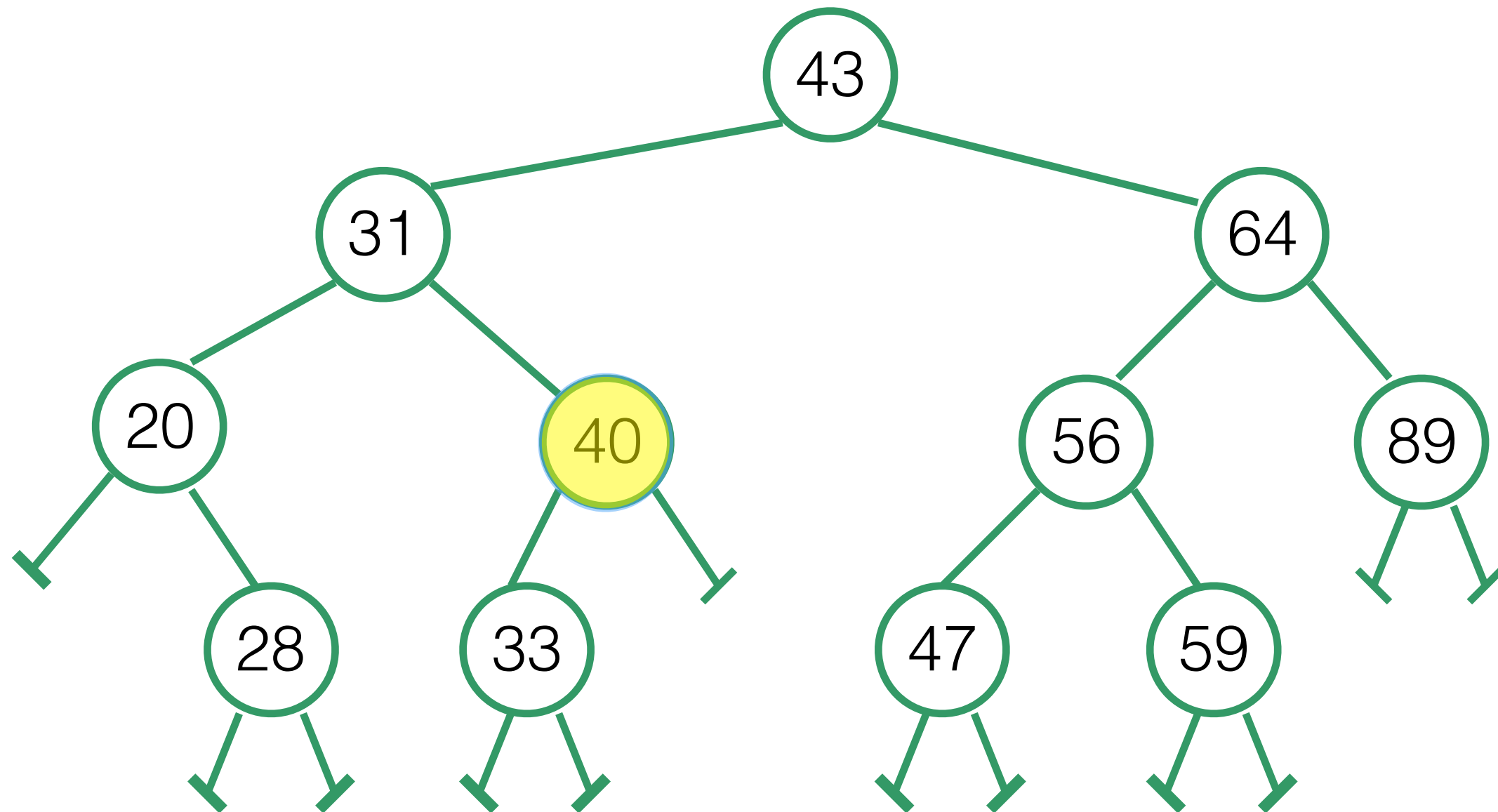
Example: Preorder



Example: Preorder

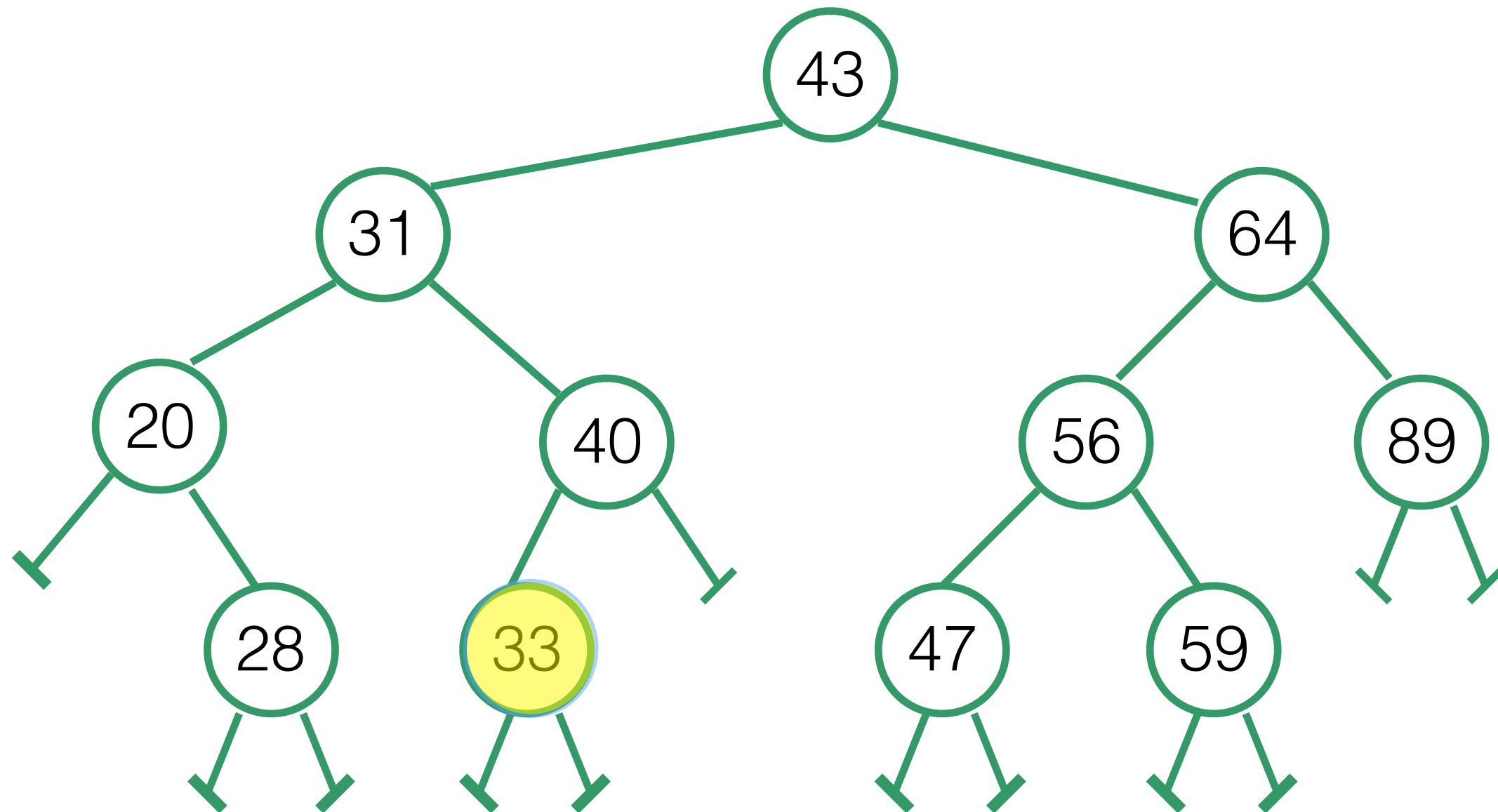


Example: Preorder



43	31	20	28	40
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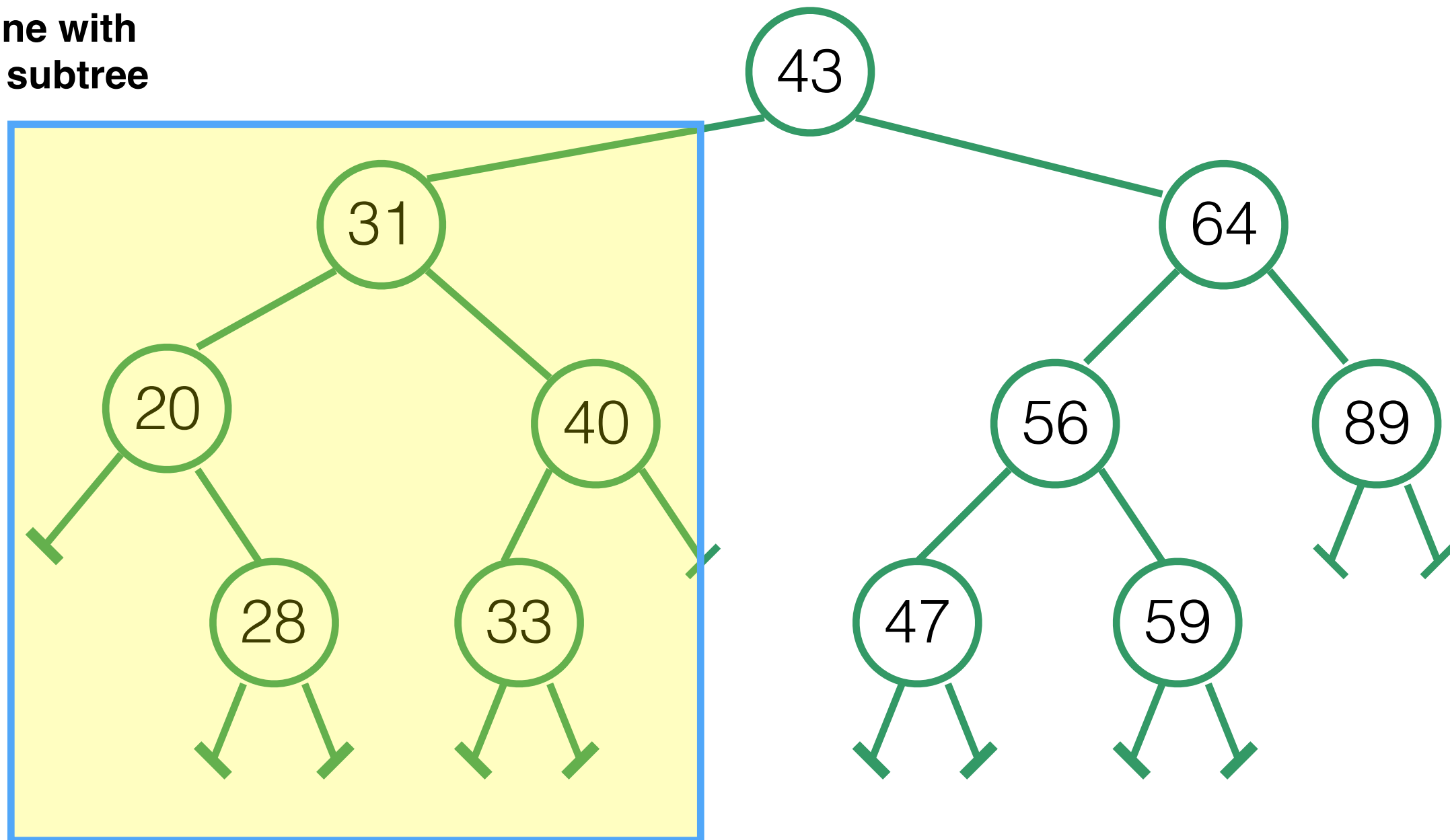
Example: Preorder



43	31	20	28	40	33
----	----	----	----	----	----

Example: Preorder

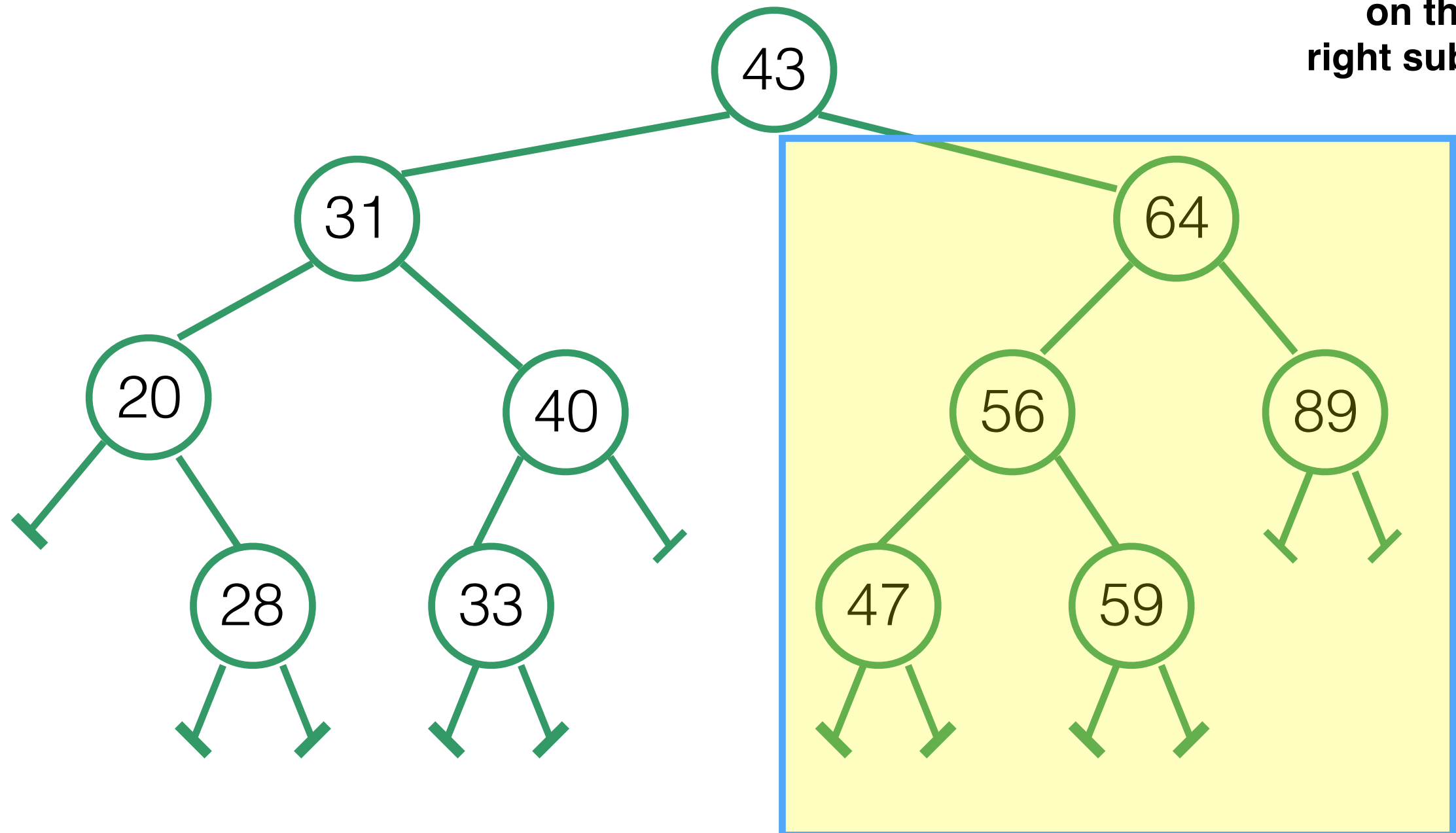
Done with
left subtree



43	31	20	28	40	33
----	----	----	----	----	----

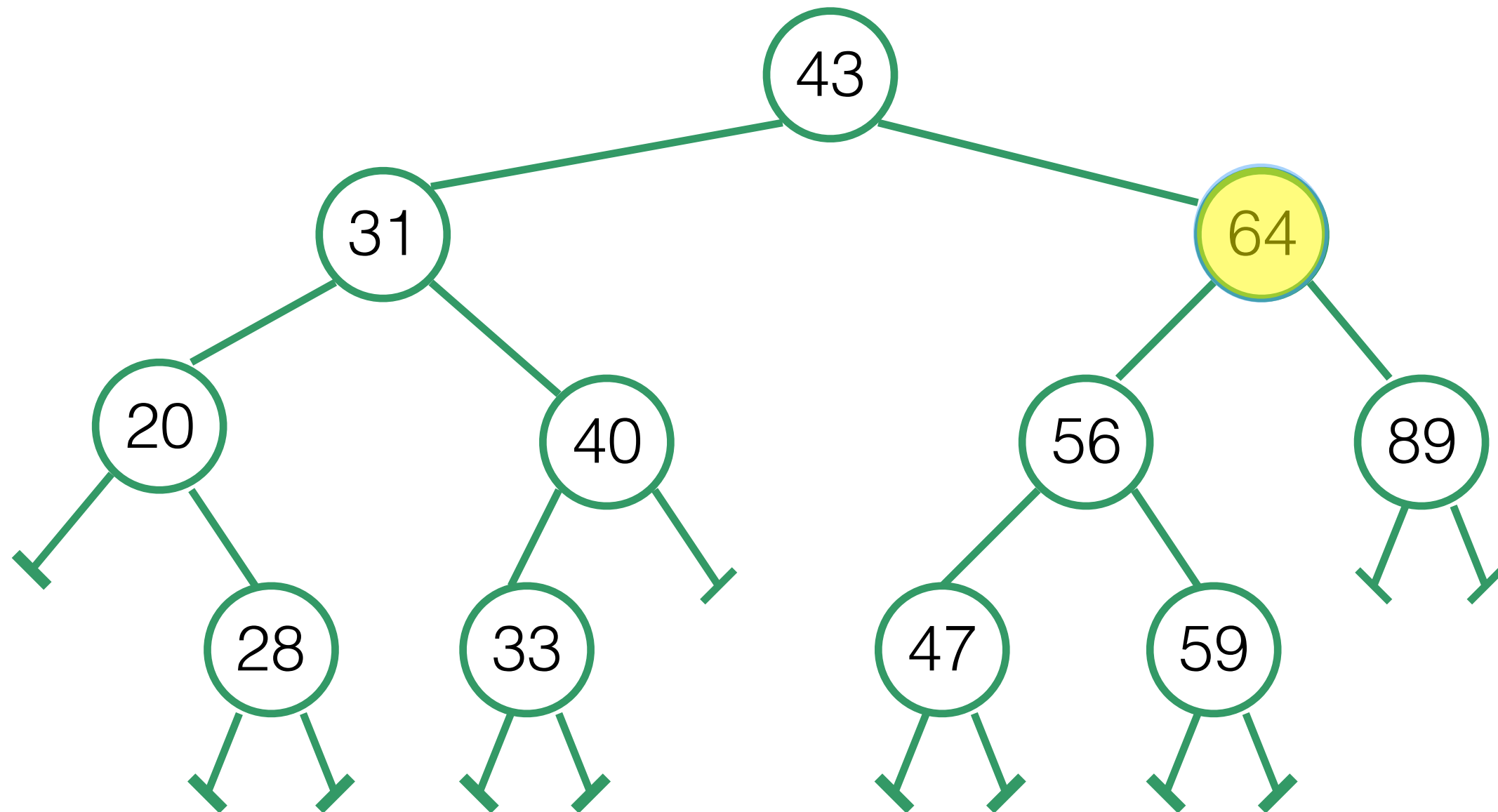
Example: Preorder

**Time to work
on the
right subtree**



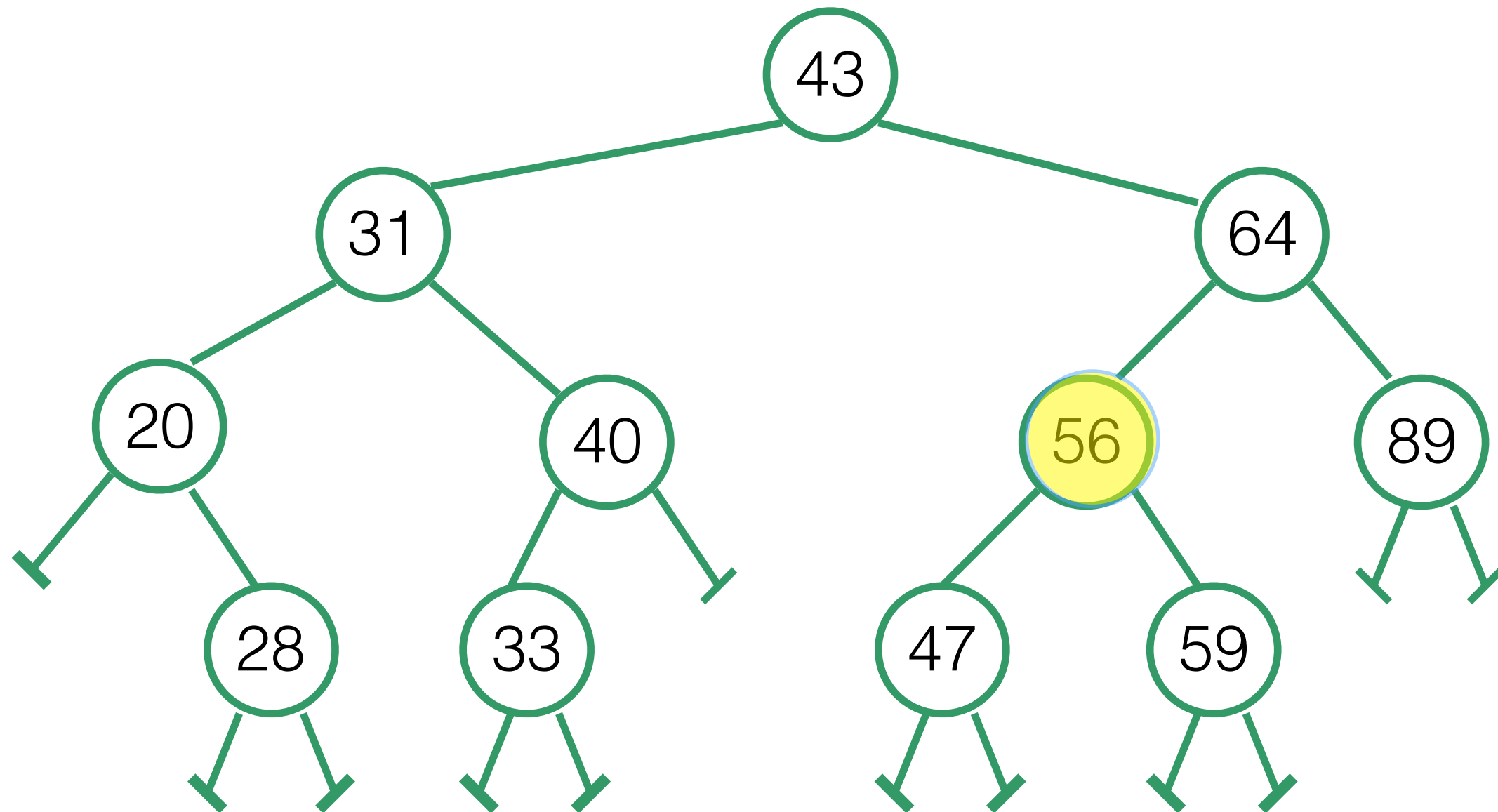
43	31	20	28	40	33
----	----	----	----	----	----

Example: Preorder



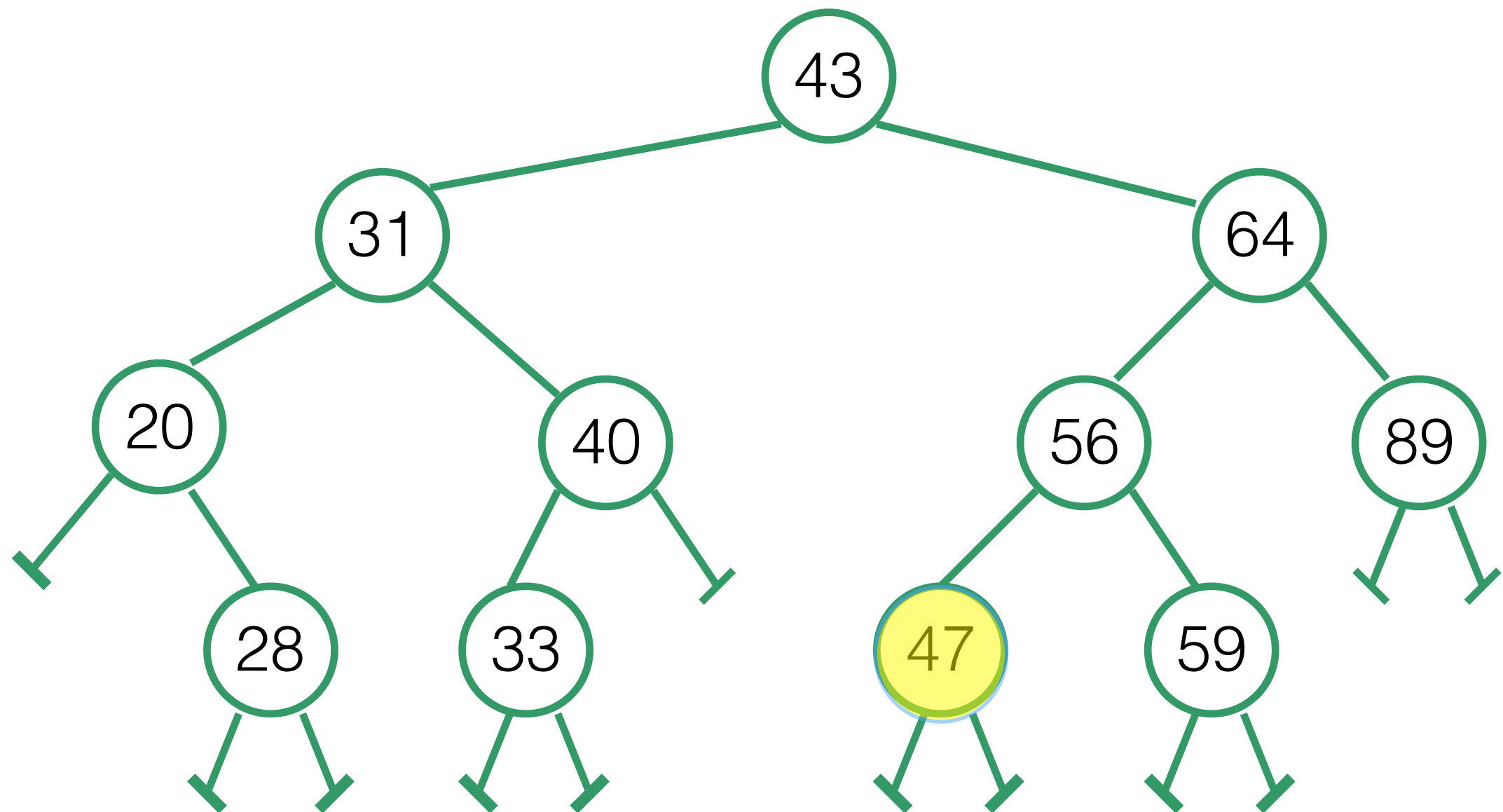
43	31	20	28	40	33	64
----	----	----	----	----	----	----

Example: Preorder



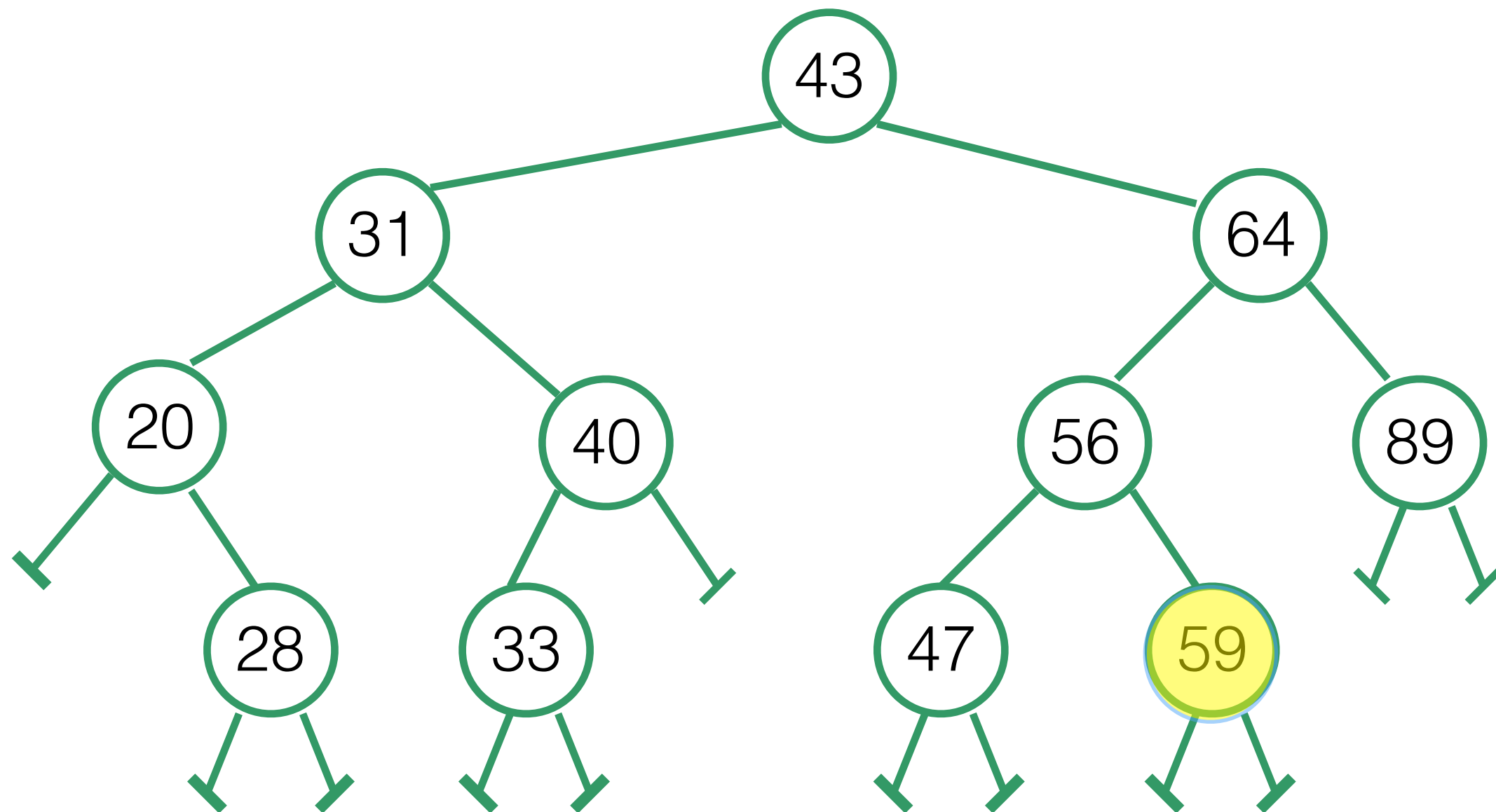
43	31	20	28	40	33	64	56
----	----	----	----	----	----	----	----

Example: Preorder



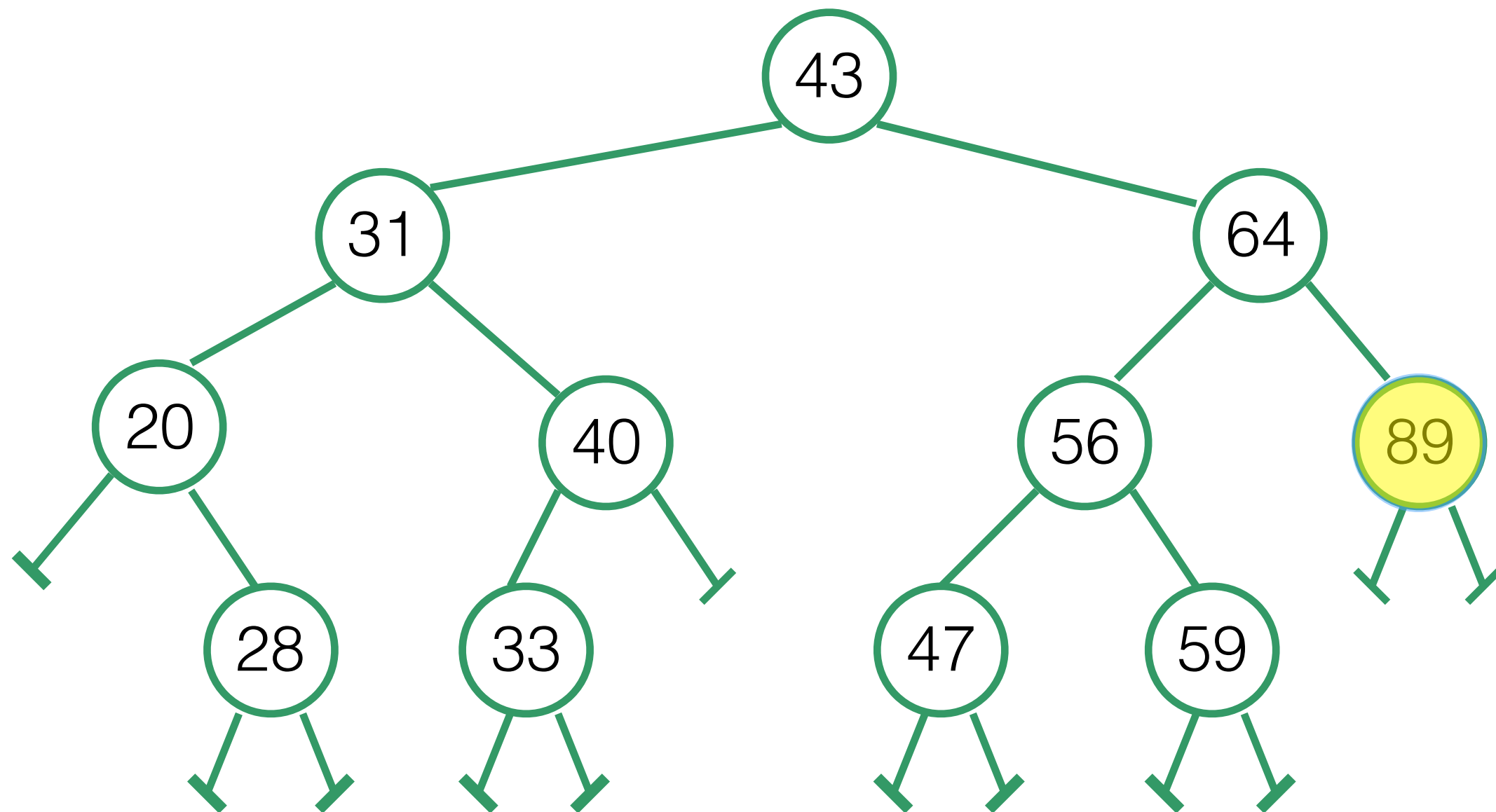
43	31	20	28	40	33	64	56	47
----	----	----	----	----	----	----	----	----

Example: Preorder



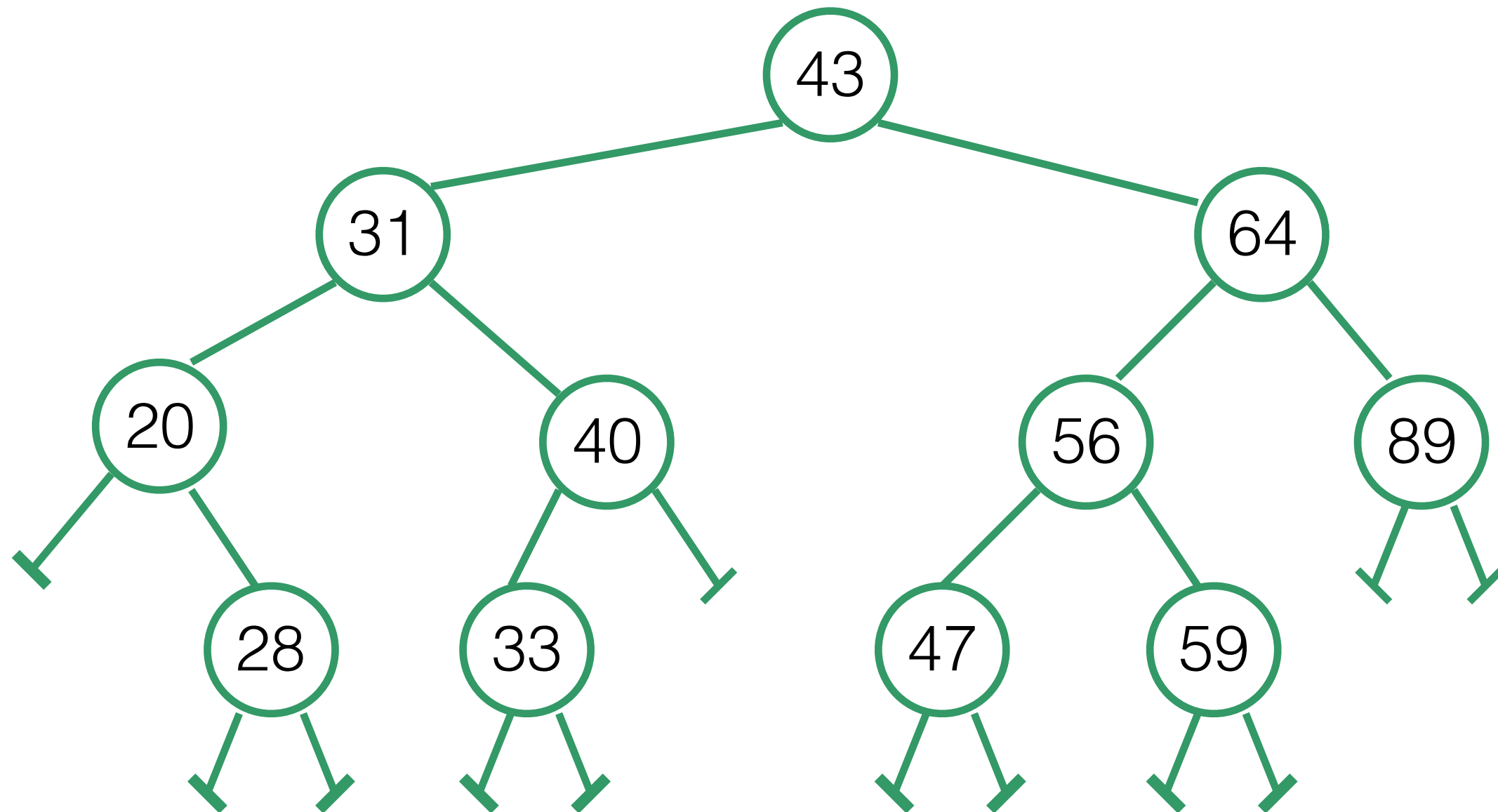
43	31	20	28	40	33	64	56	47	59
----	----	----	----	----	----	----	----	----	----

Example: Preorder

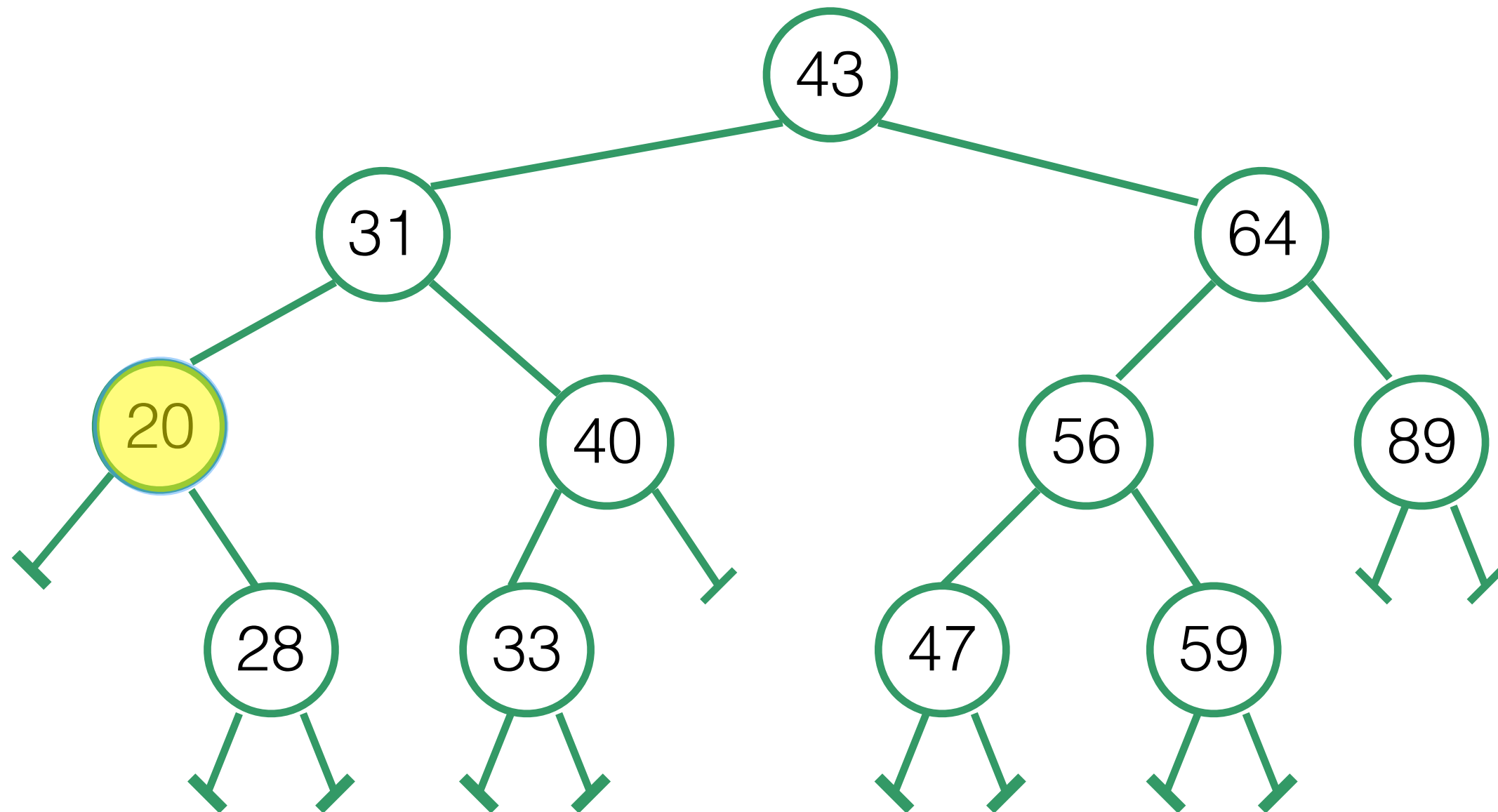


43	31	20	28	40	33	64	56	47	59	89
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Example: Inorder

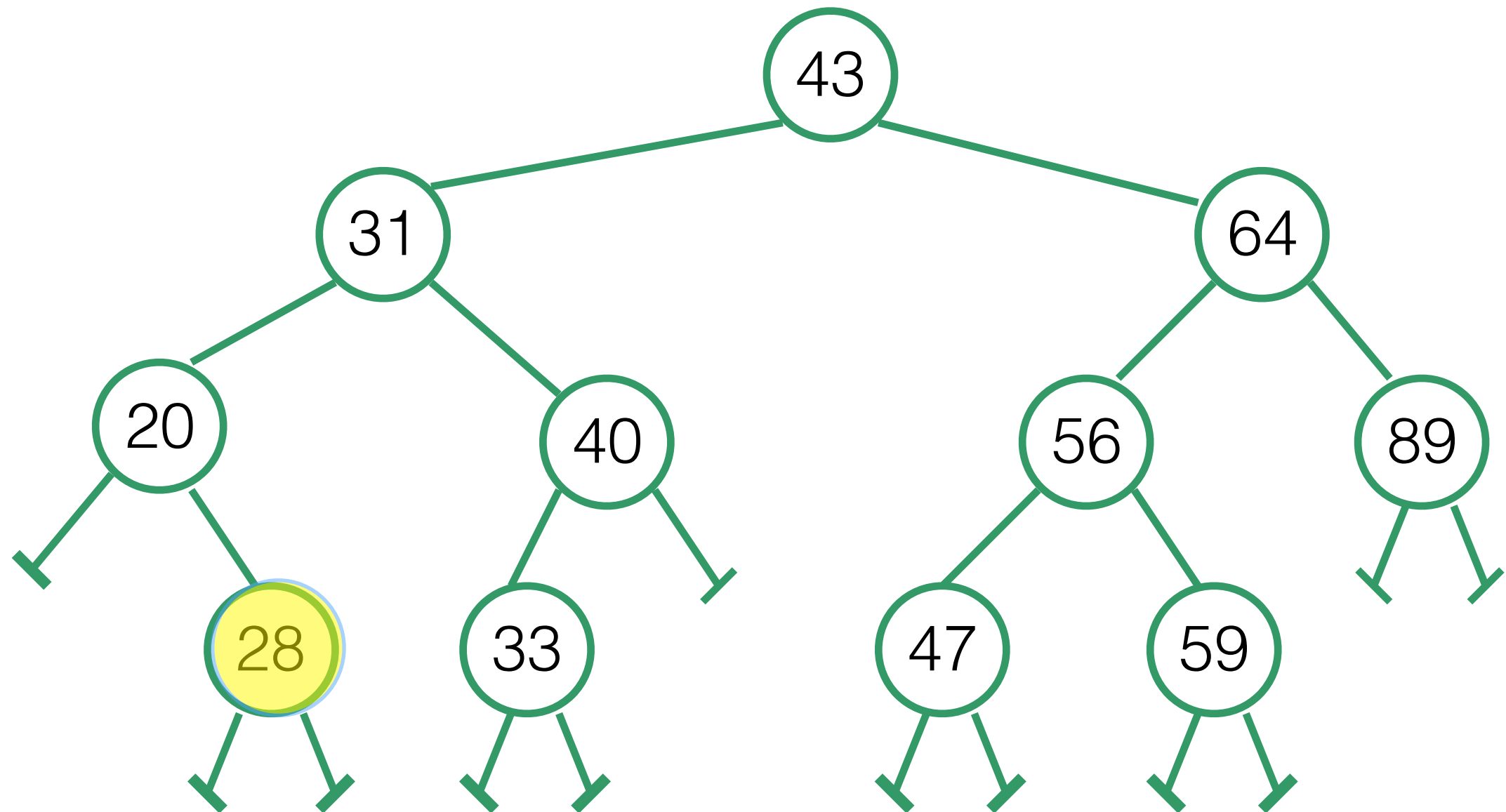


Example: Inorder



20

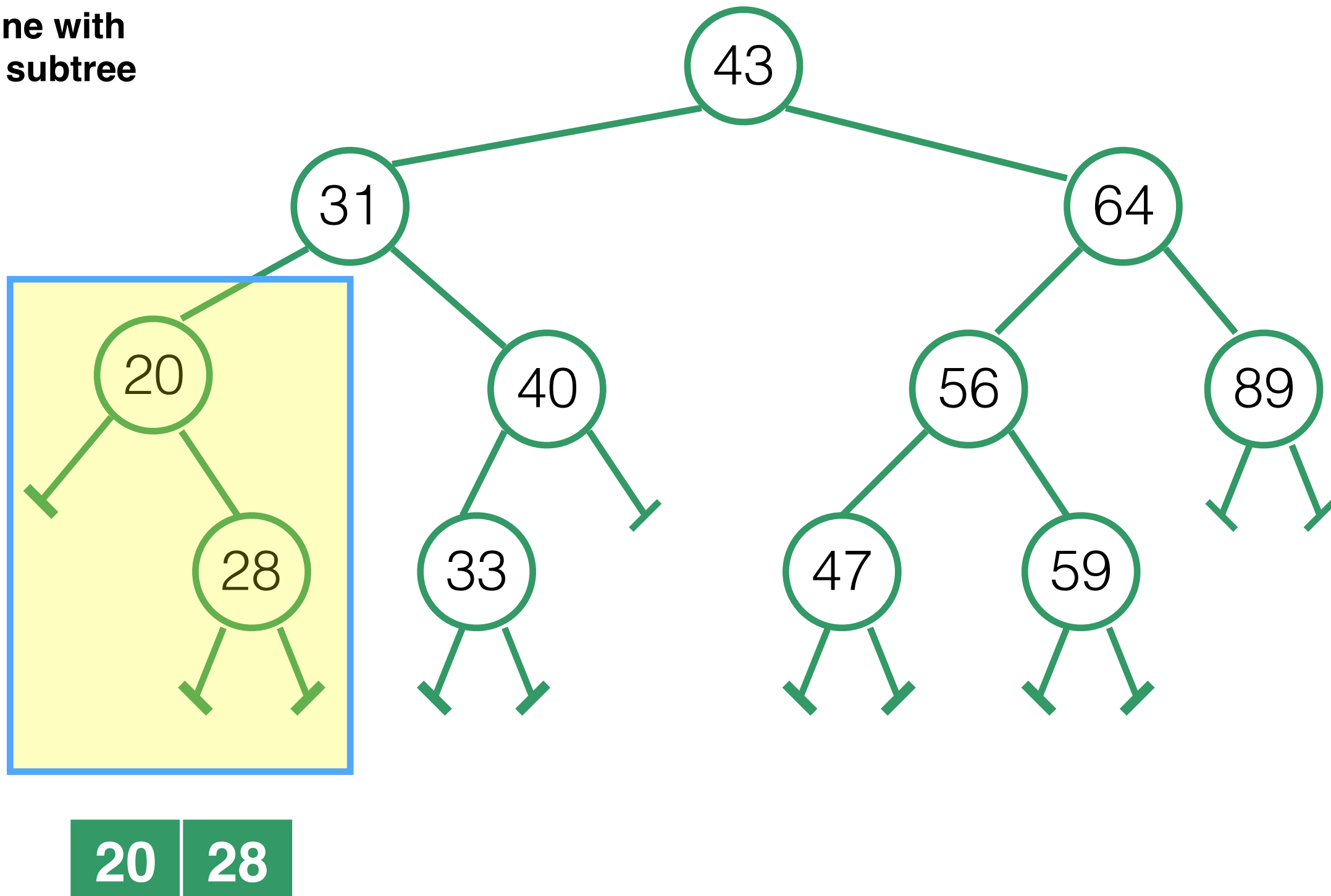
Example: Inorder



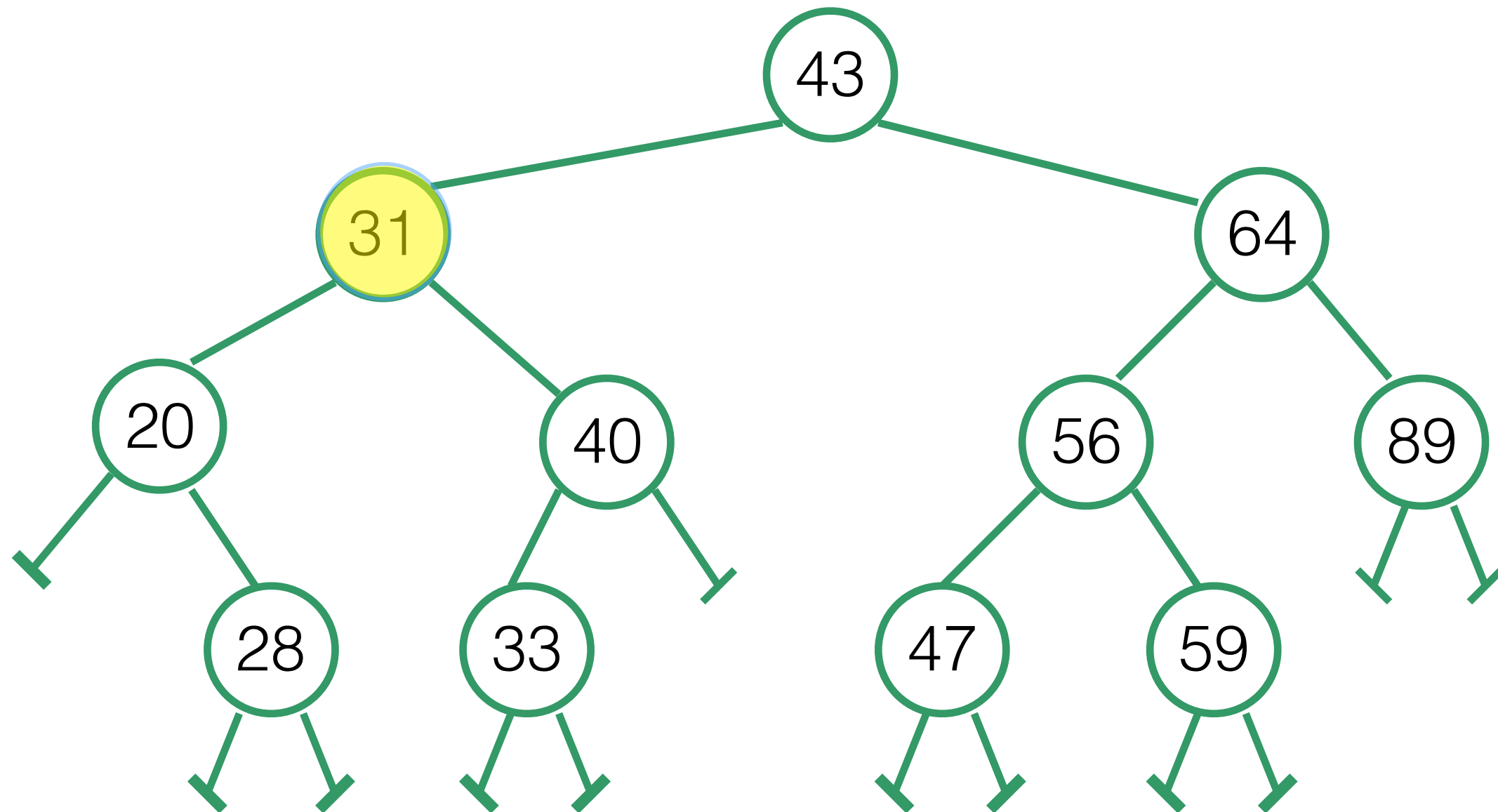
20	28
----	----

Example: Inorder

Done with
left subtree

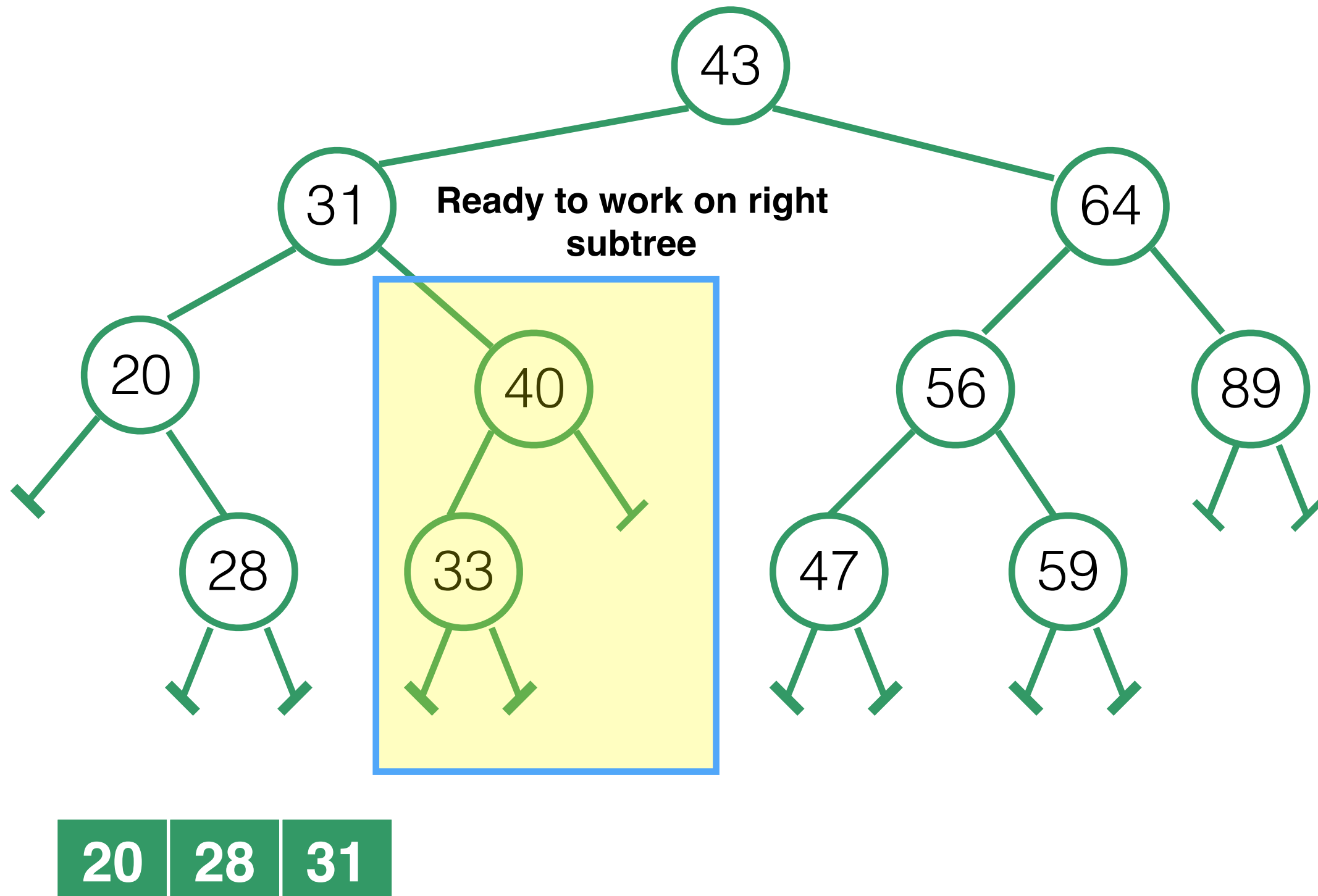


Example: Inorder

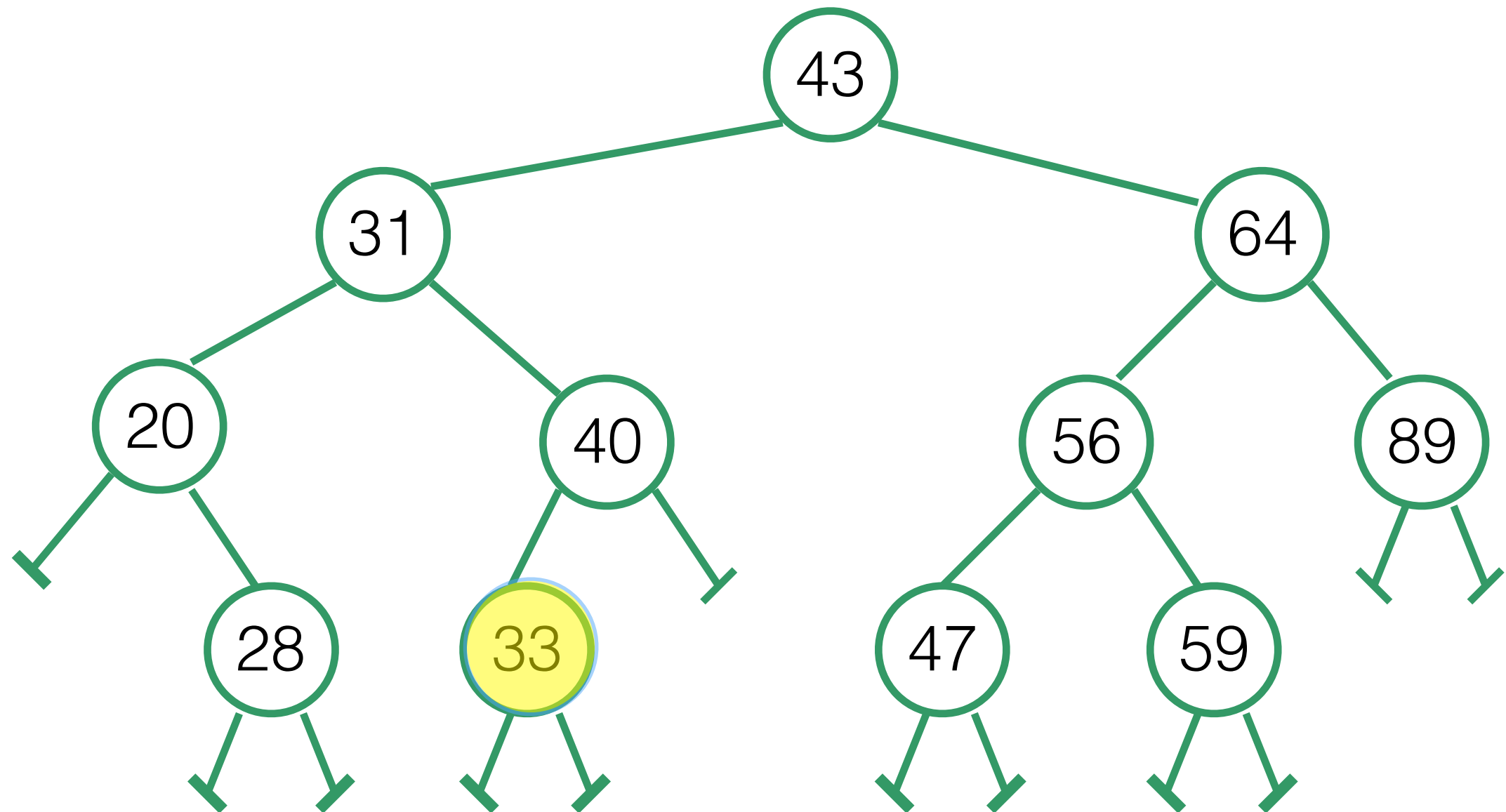


20	28	31
----	----	----

Example: Inorder

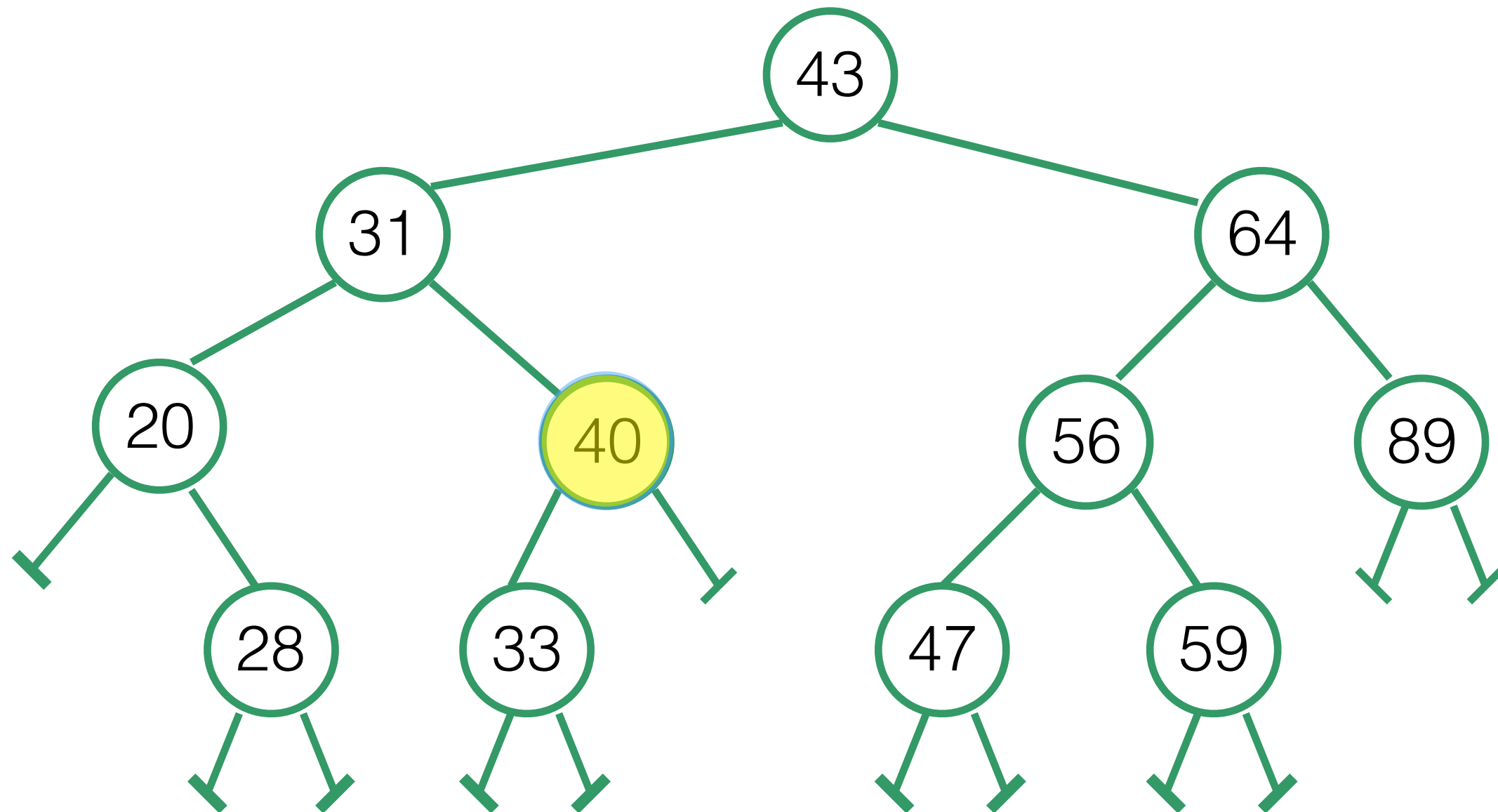


Example: Inorder



20	28	31	33
----	----	----	----

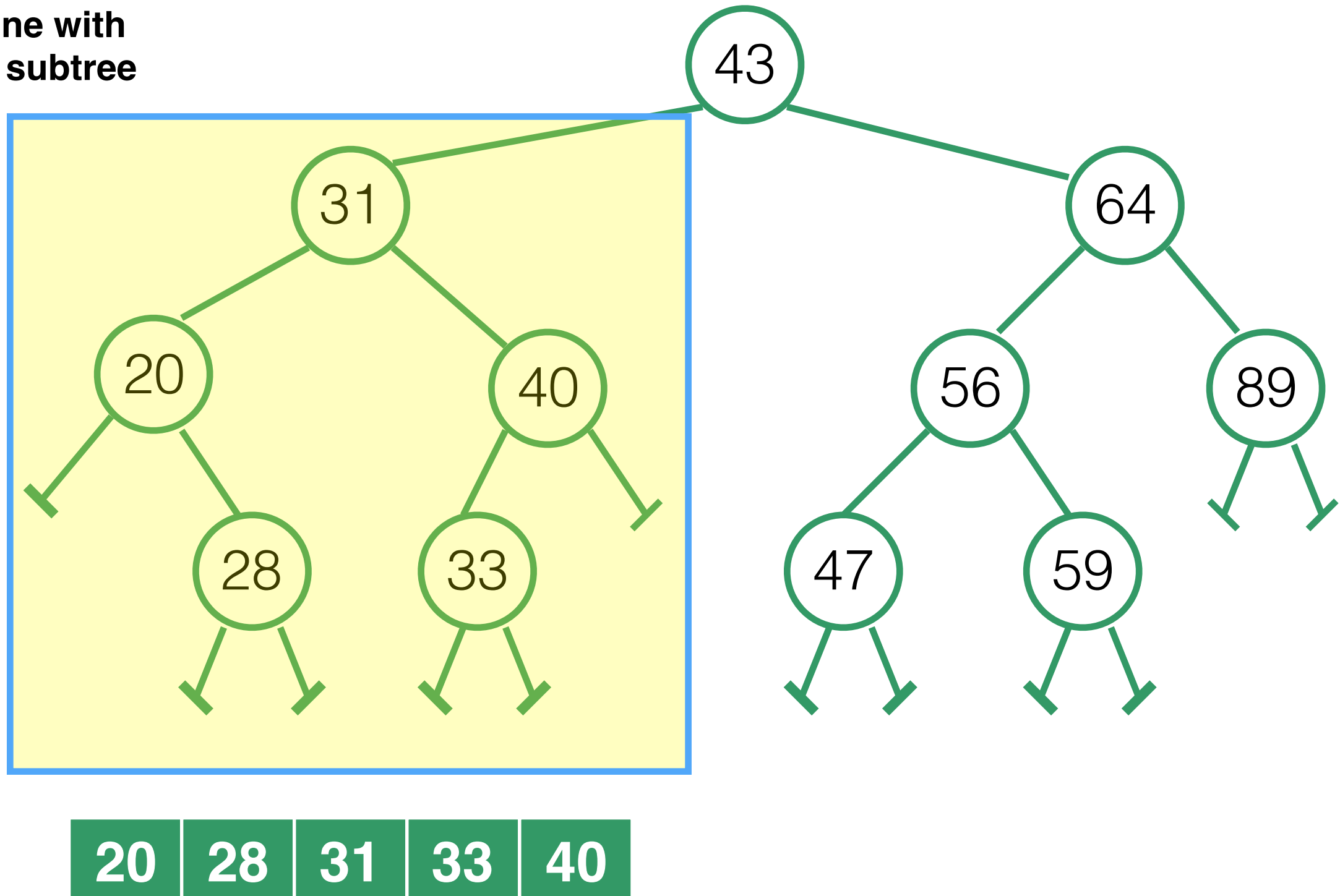
Example: Inorder



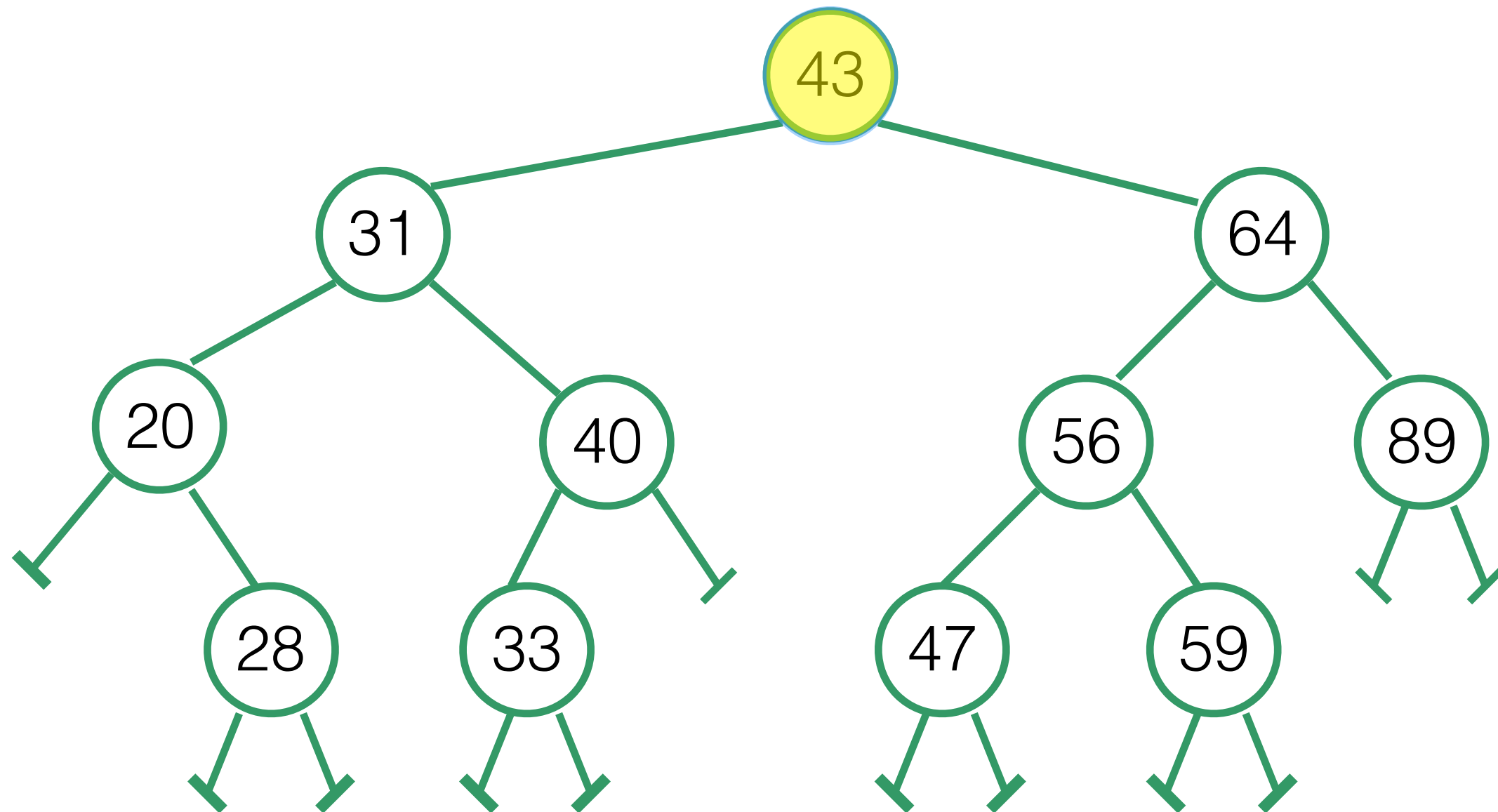
20	28	31	33	40
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Example: Inorder

Done with
left subtree

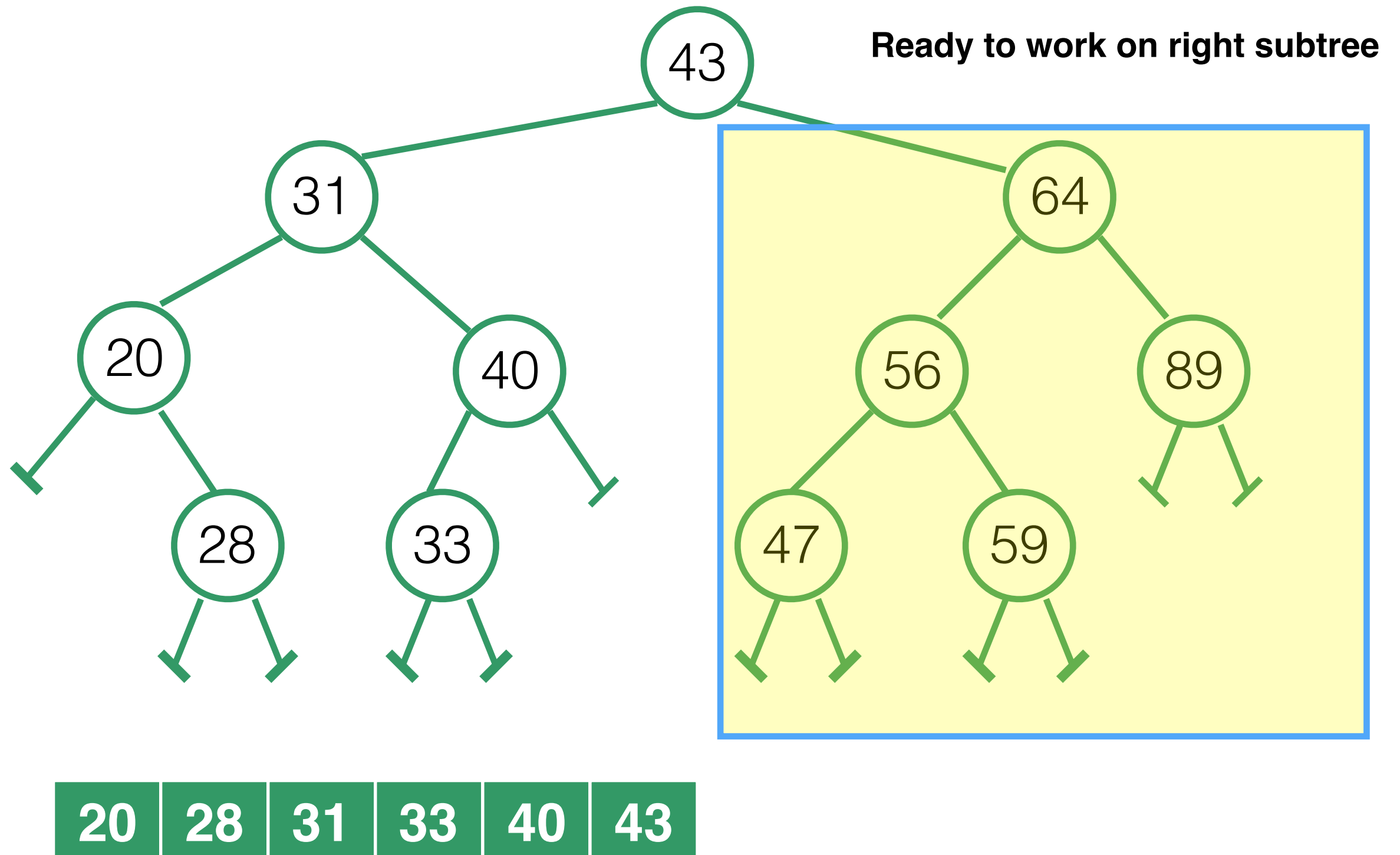


Example: Inorder

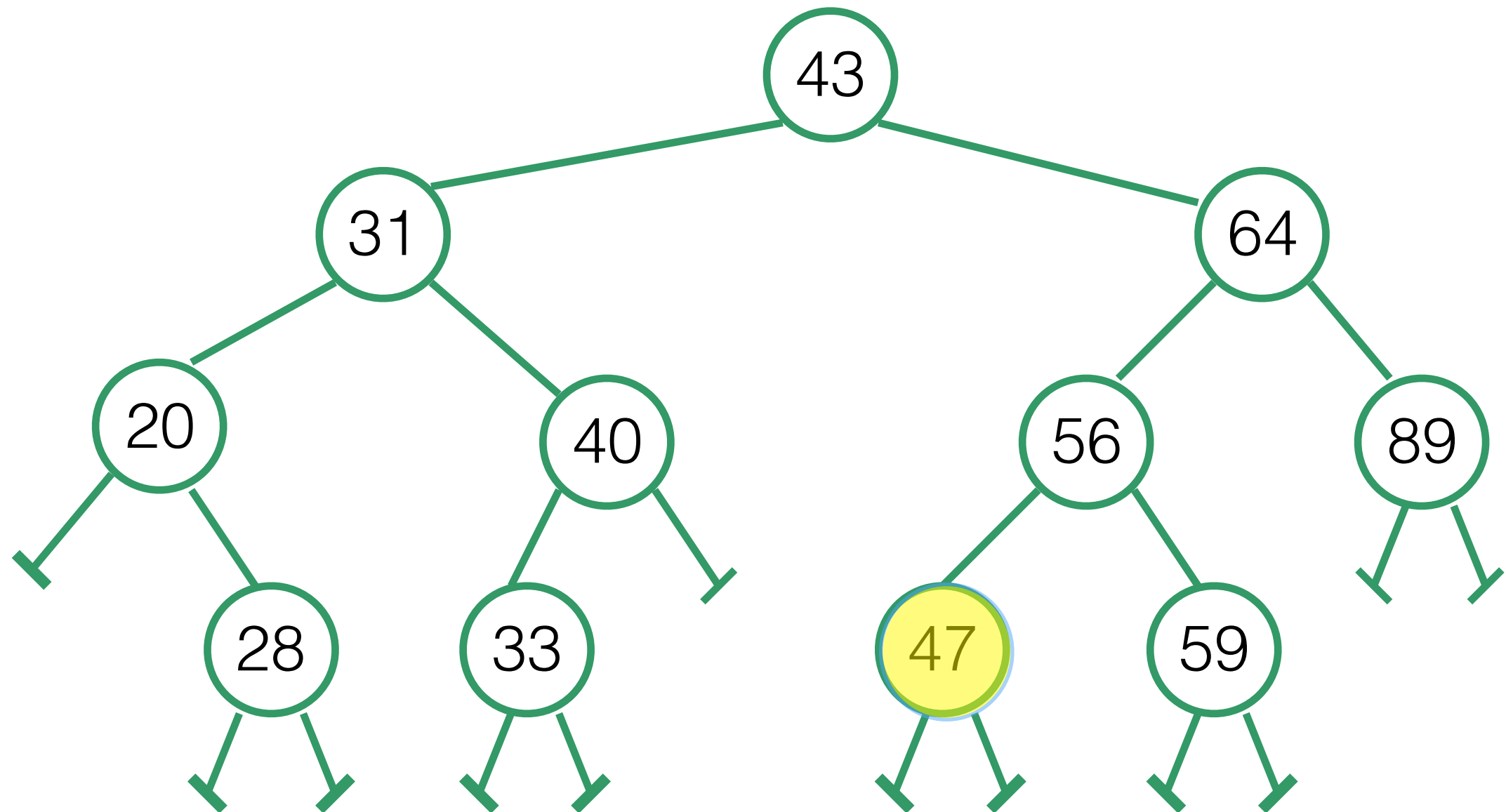


20	28	31	33	40	43
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Example: Inorder

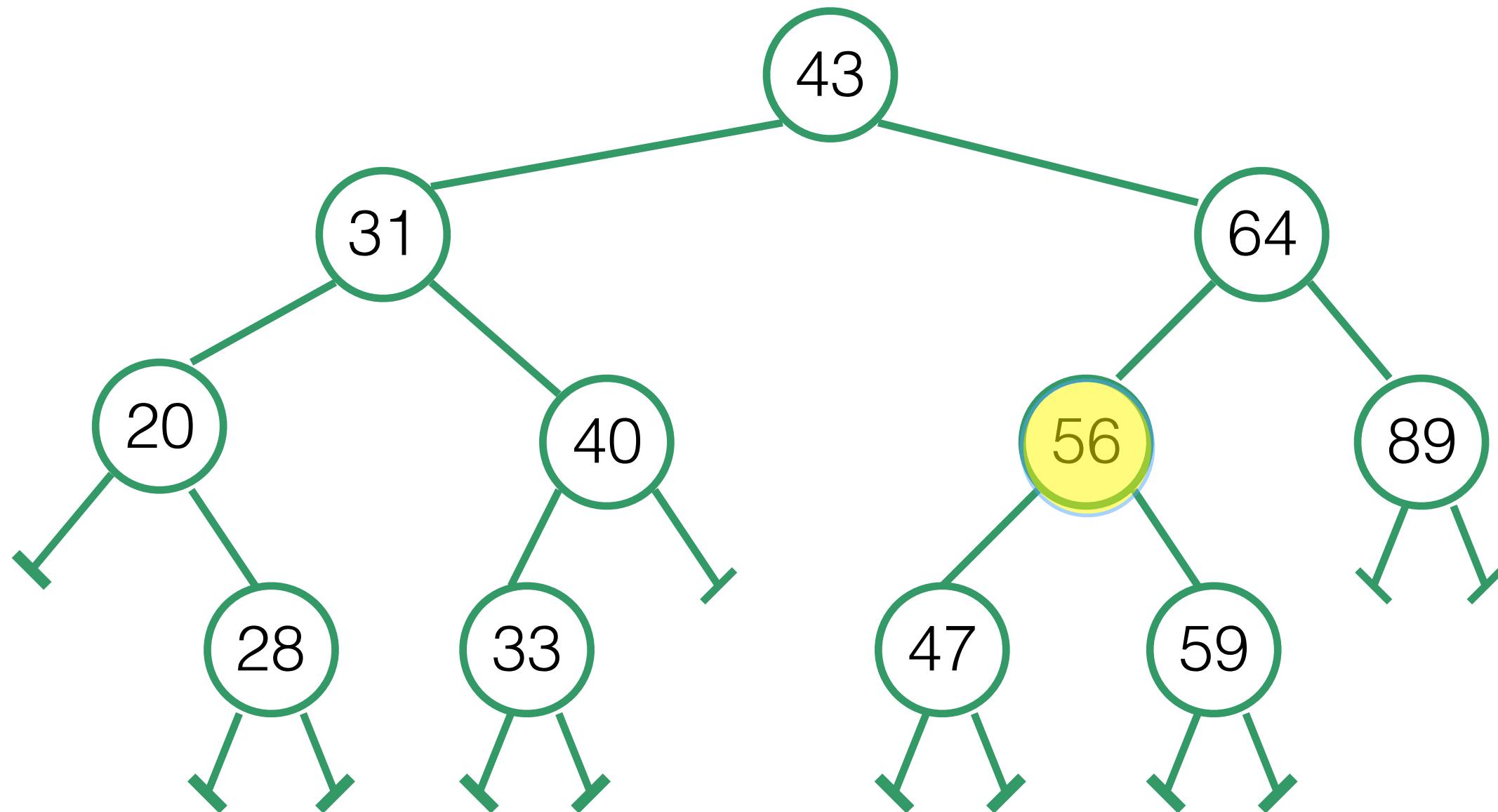


Example: Inorder



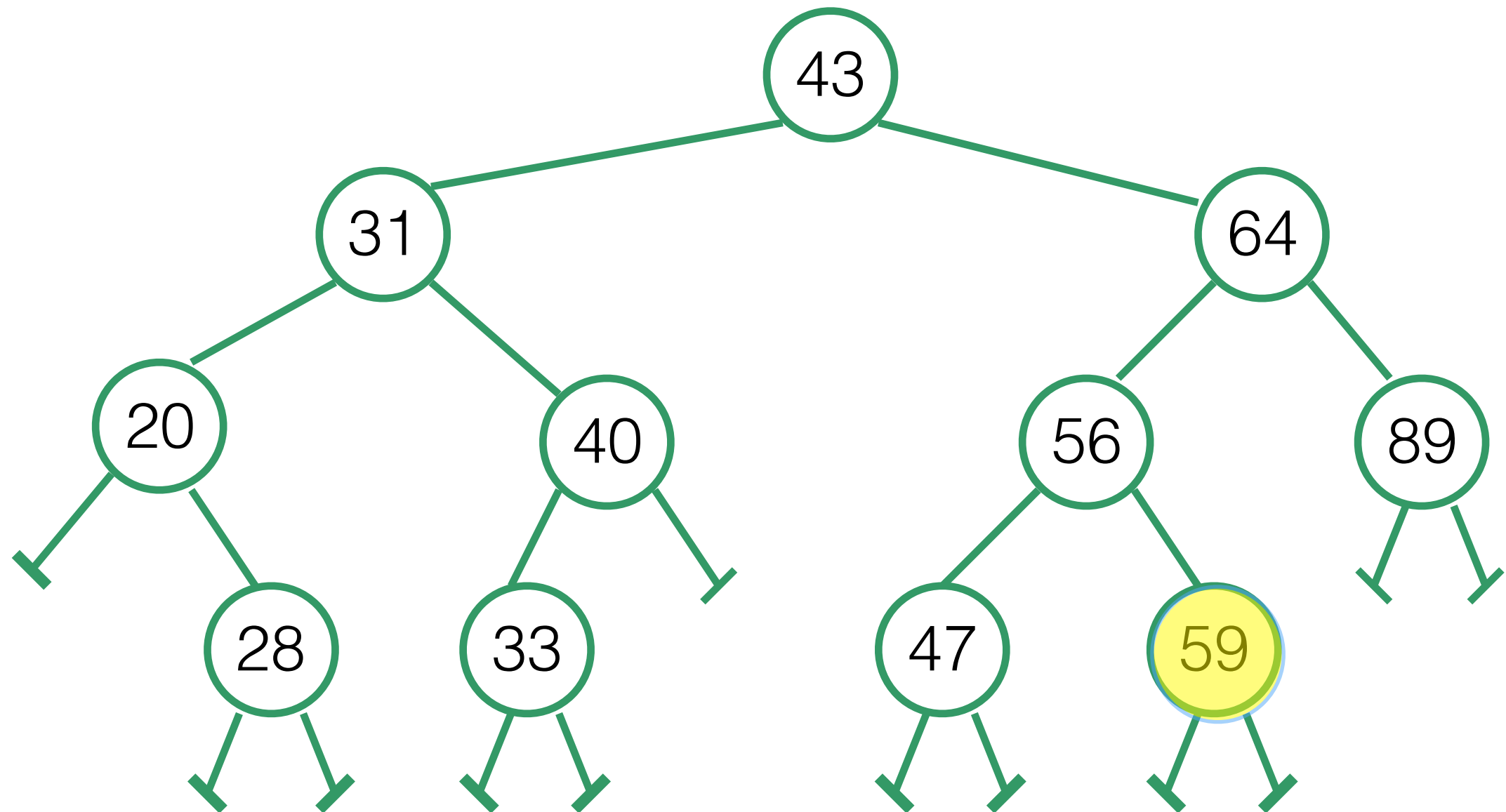
20	28	31	33	40	43	47
----	----	----	----	----	----	----

Example: Inorder



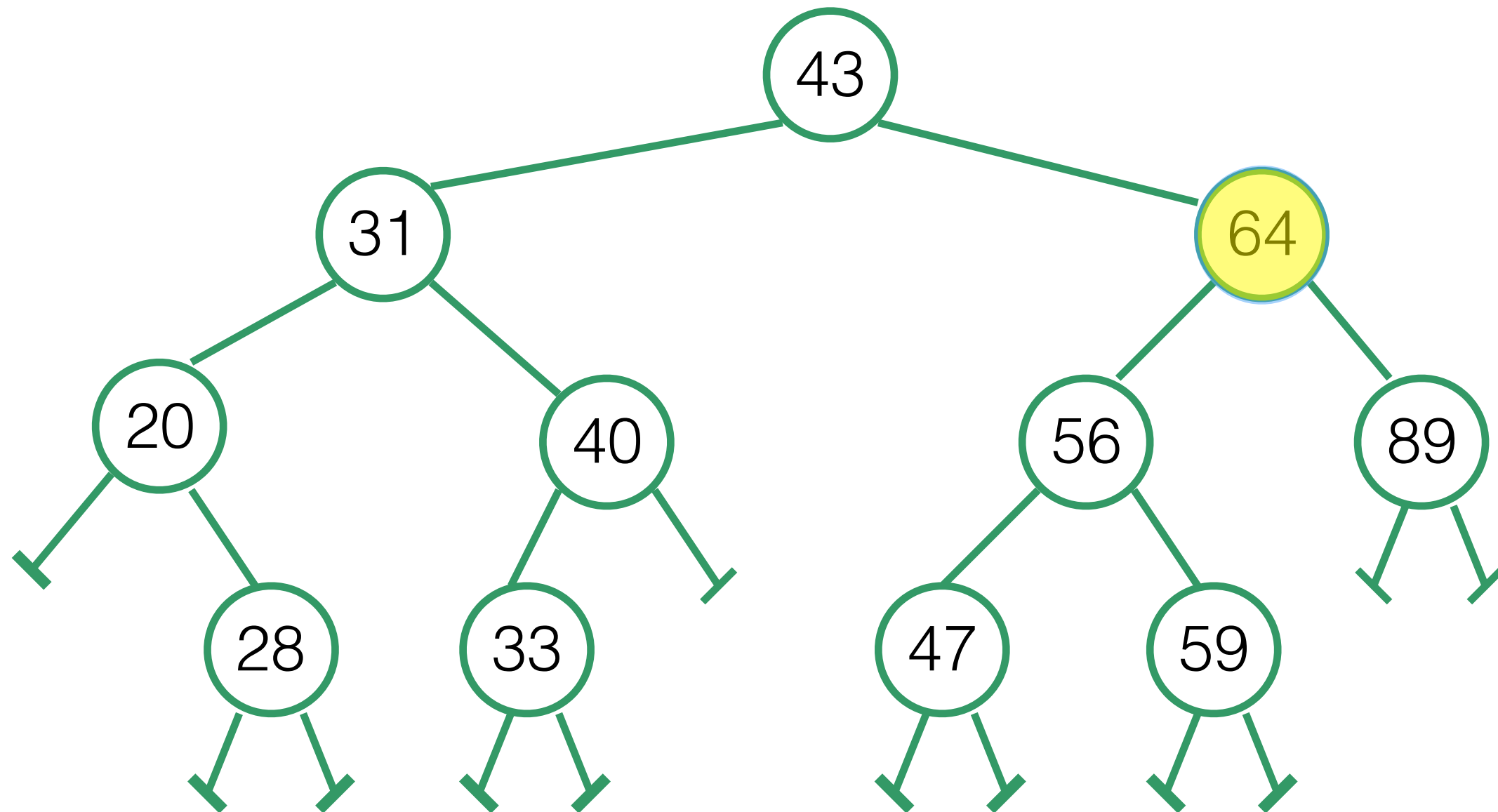
20	28	31	33	40	43	47	56
----	----	----	----	----	----	----	----

Example: Inorder



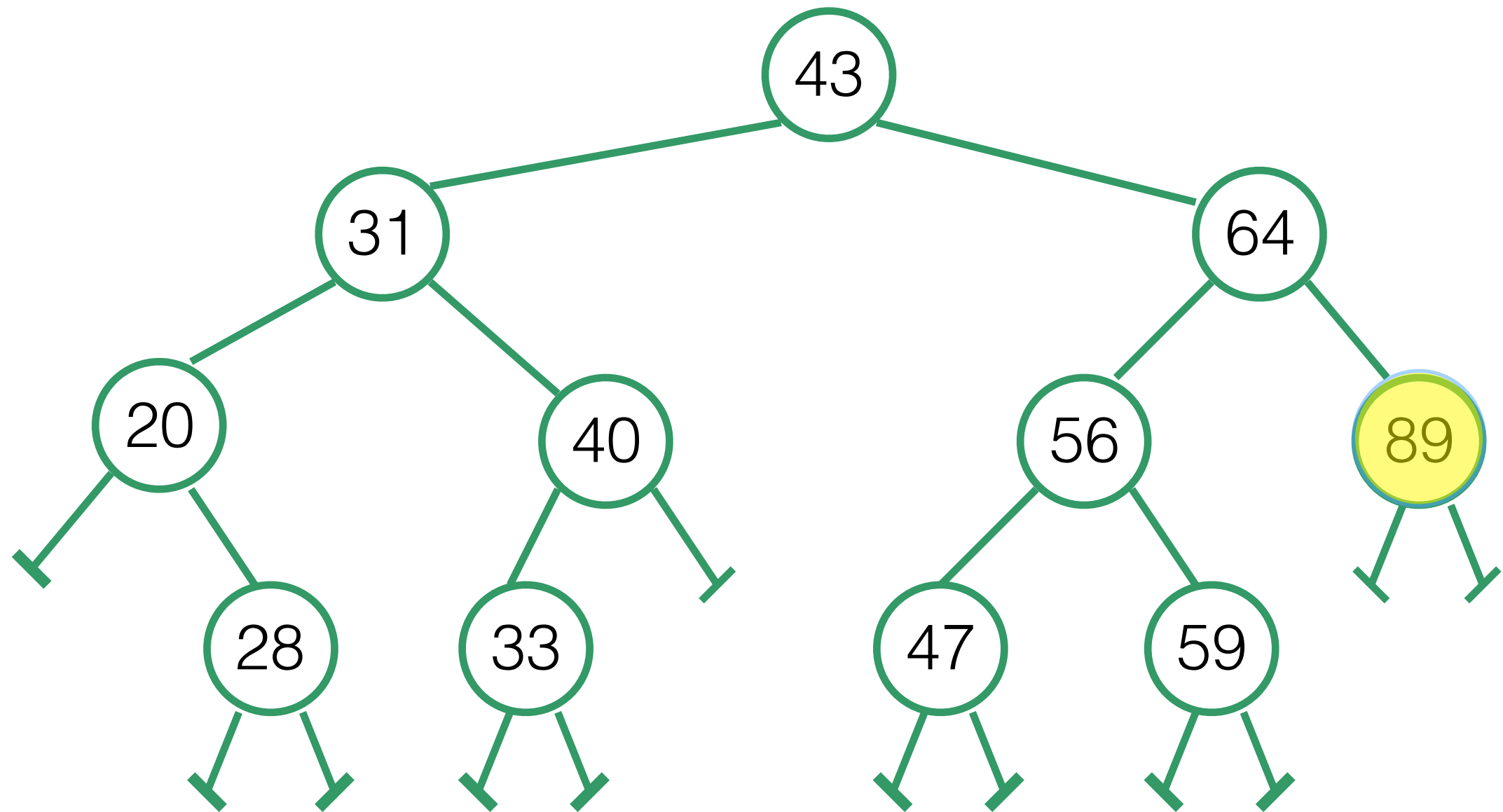
20	28	31	33	40	43	47	56	59
----	----	----	----	----	----	----	----	----

Example: Inorder



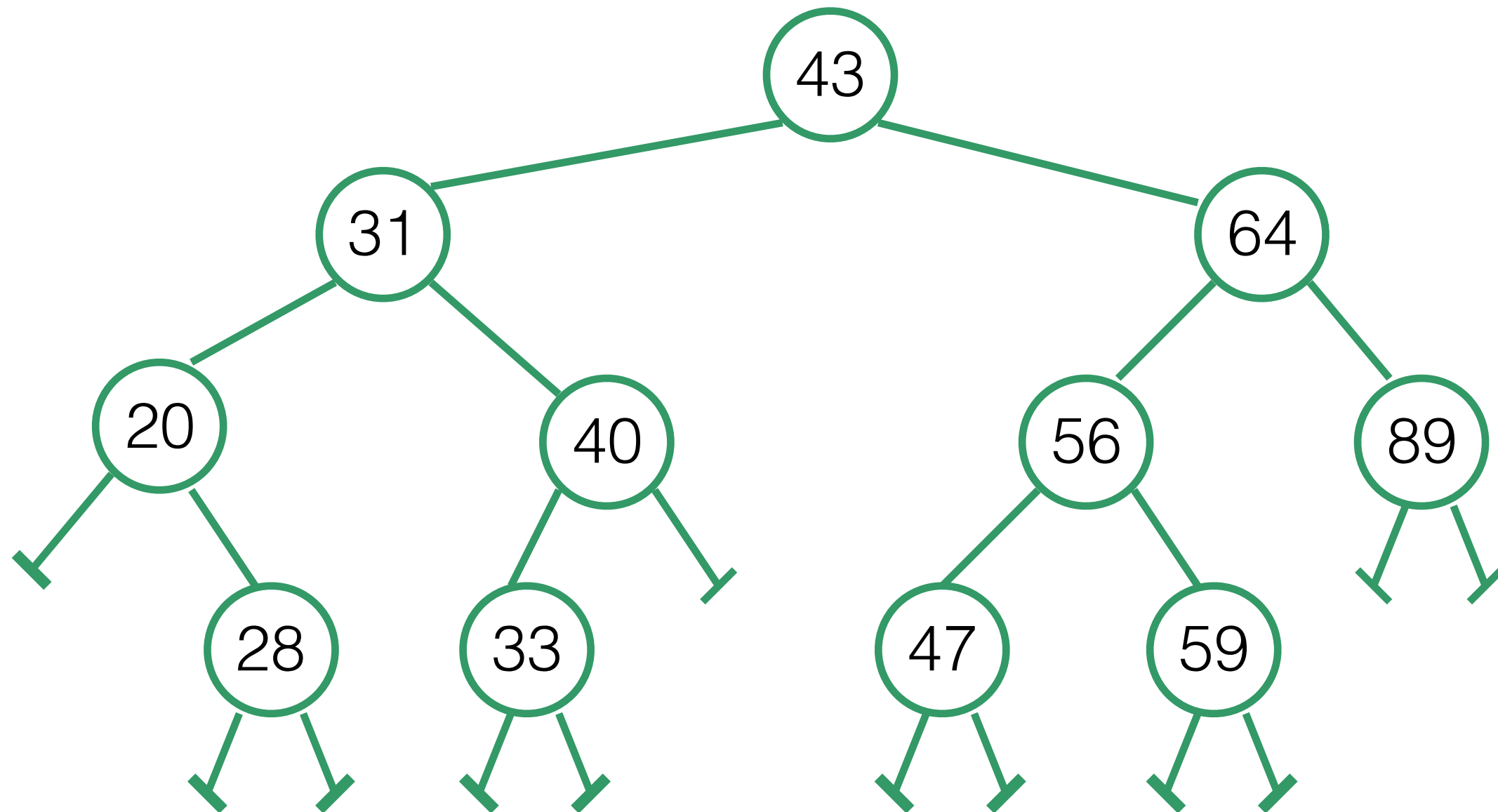
20	28	31	33	40	43	47	56	59	64
----	----	----	----	----	----	----	----	----	----

Example: Inorder

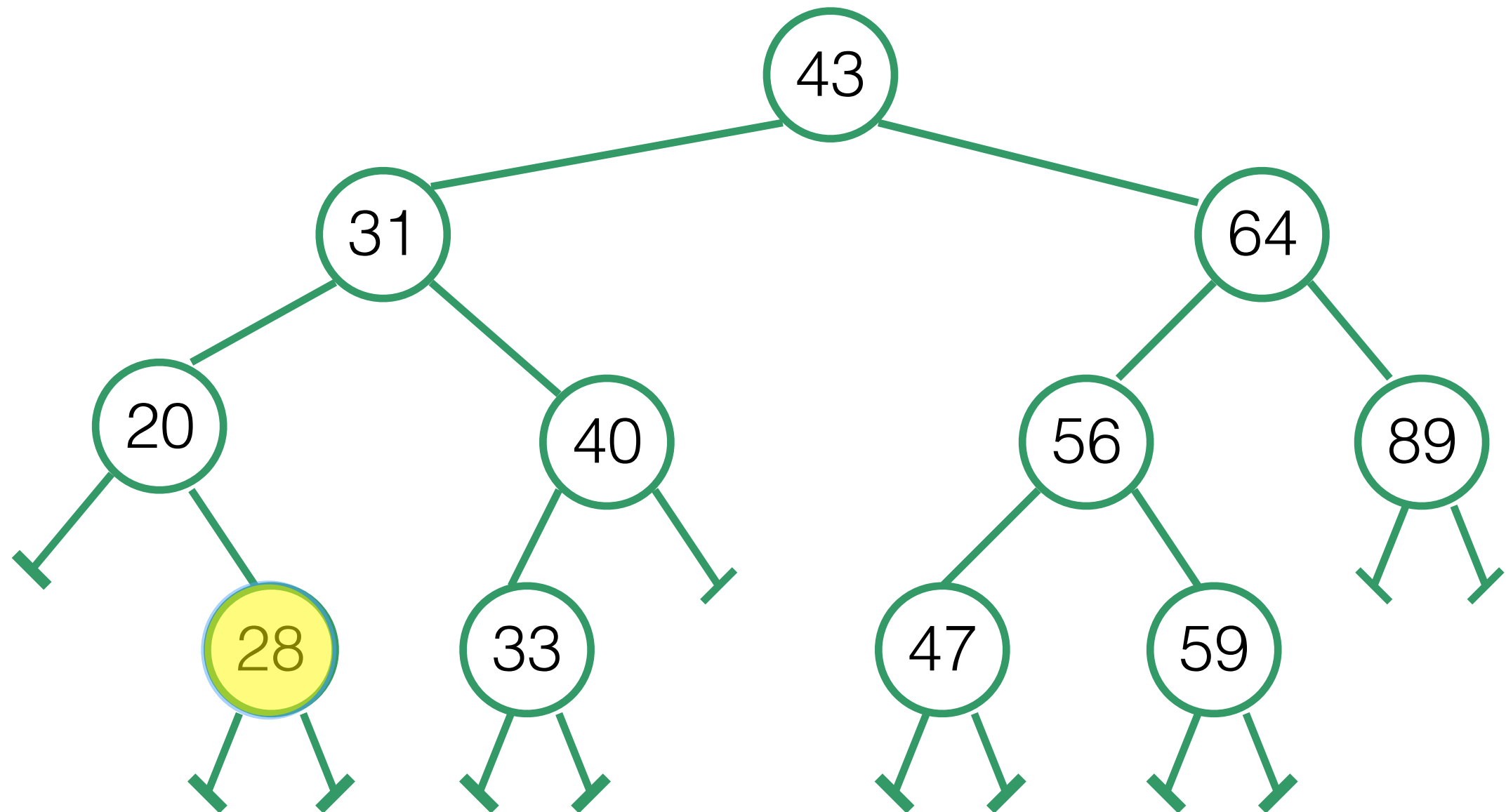


20	28	31	33	40	43	47	56	59	64	89
----	----	----	----	----	----	----	----	----	----	----

Example: Postorder

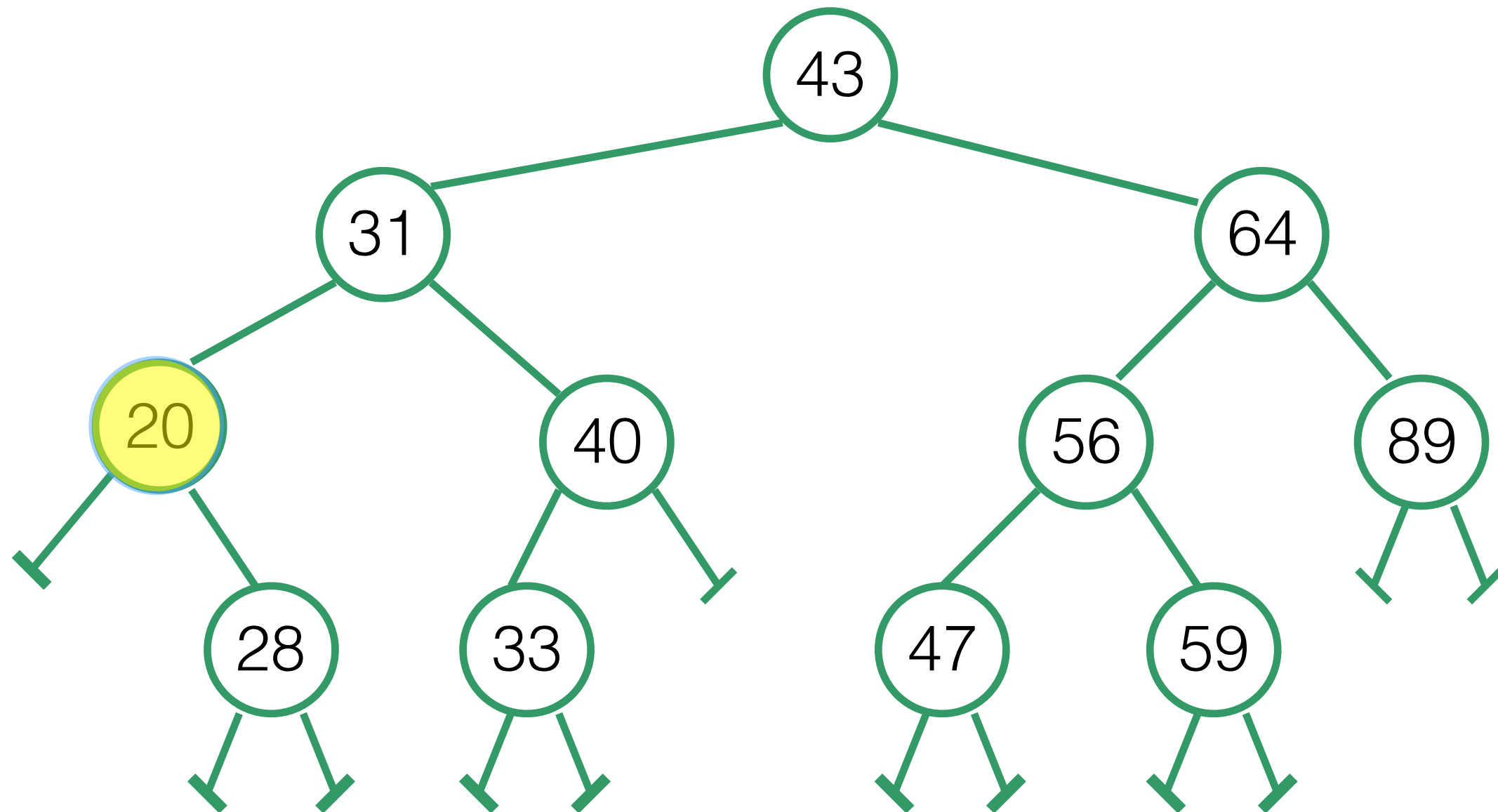


Example: Postorder



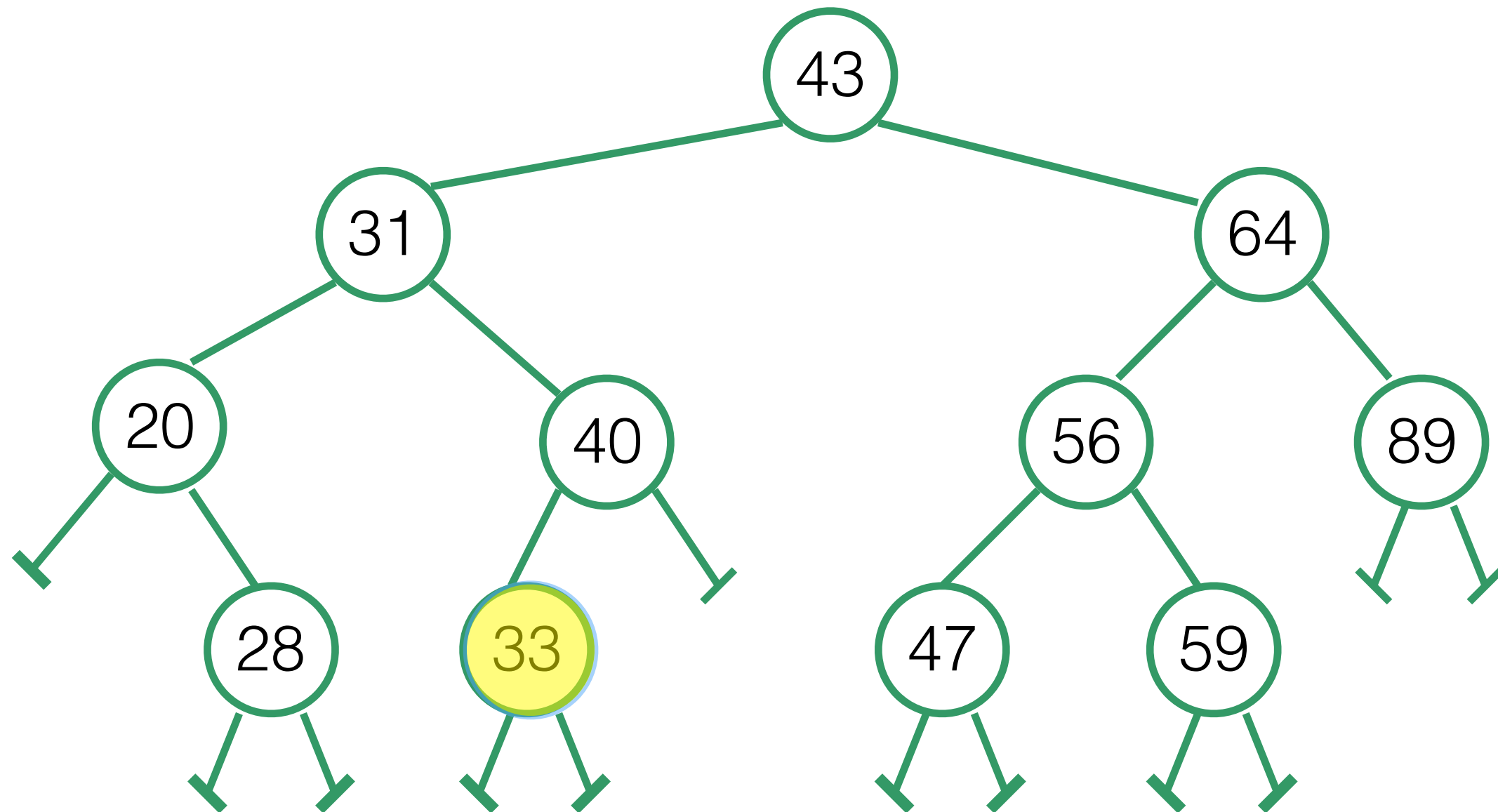
28

Example: Postorder



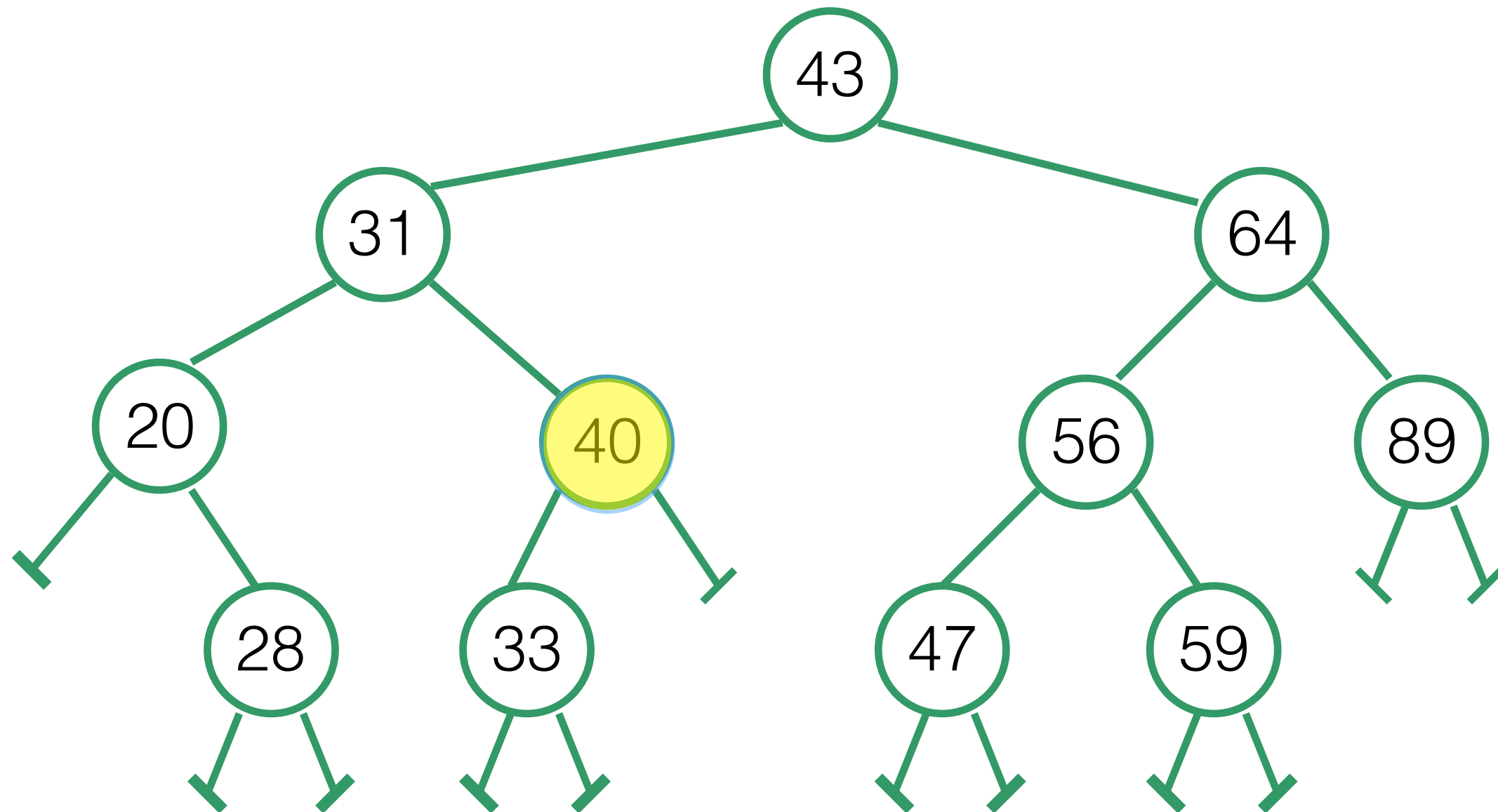
28	20
----	----

Example: Postorder



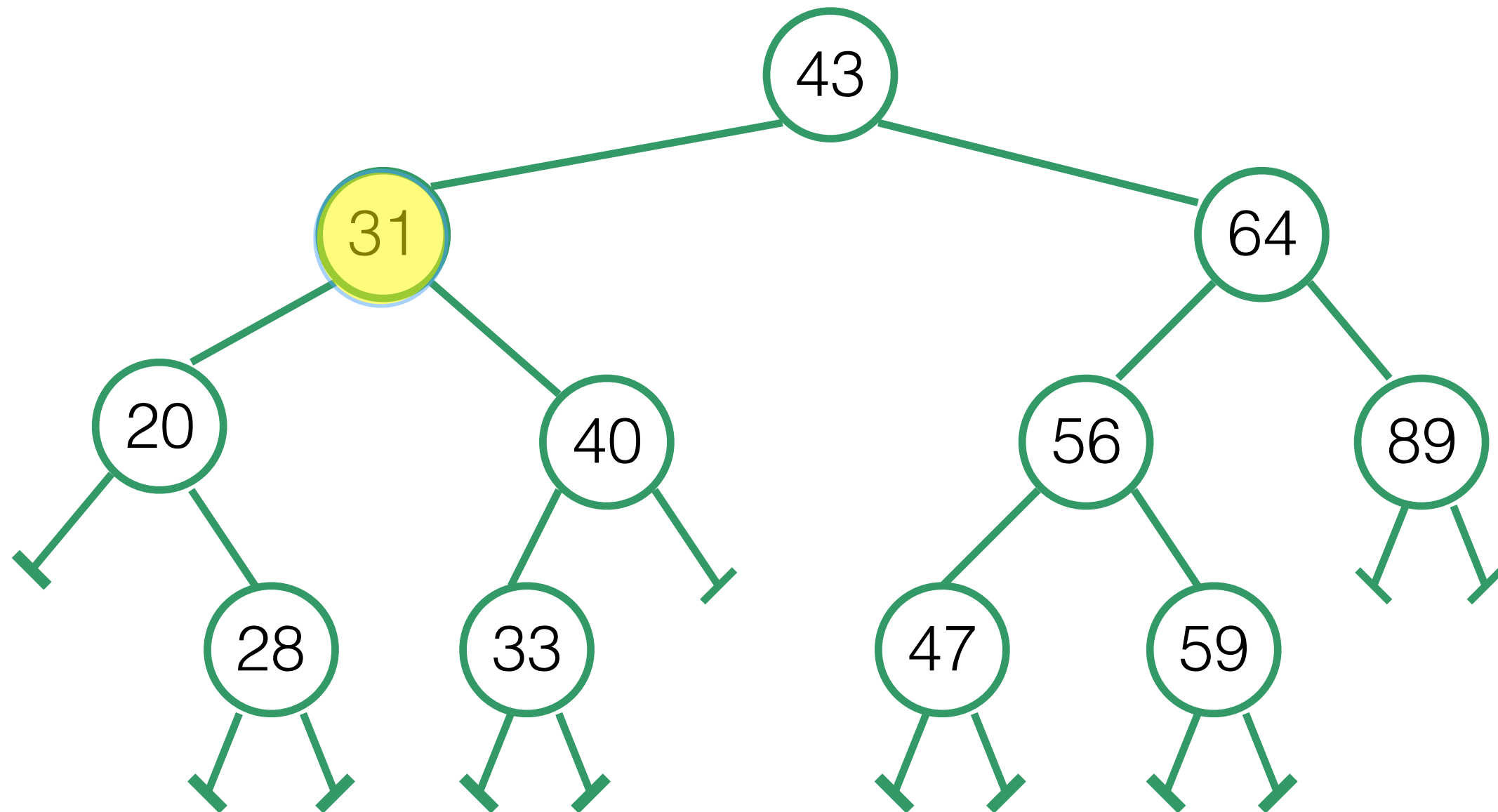
28	20	33
----	----	----

Example: Postorder



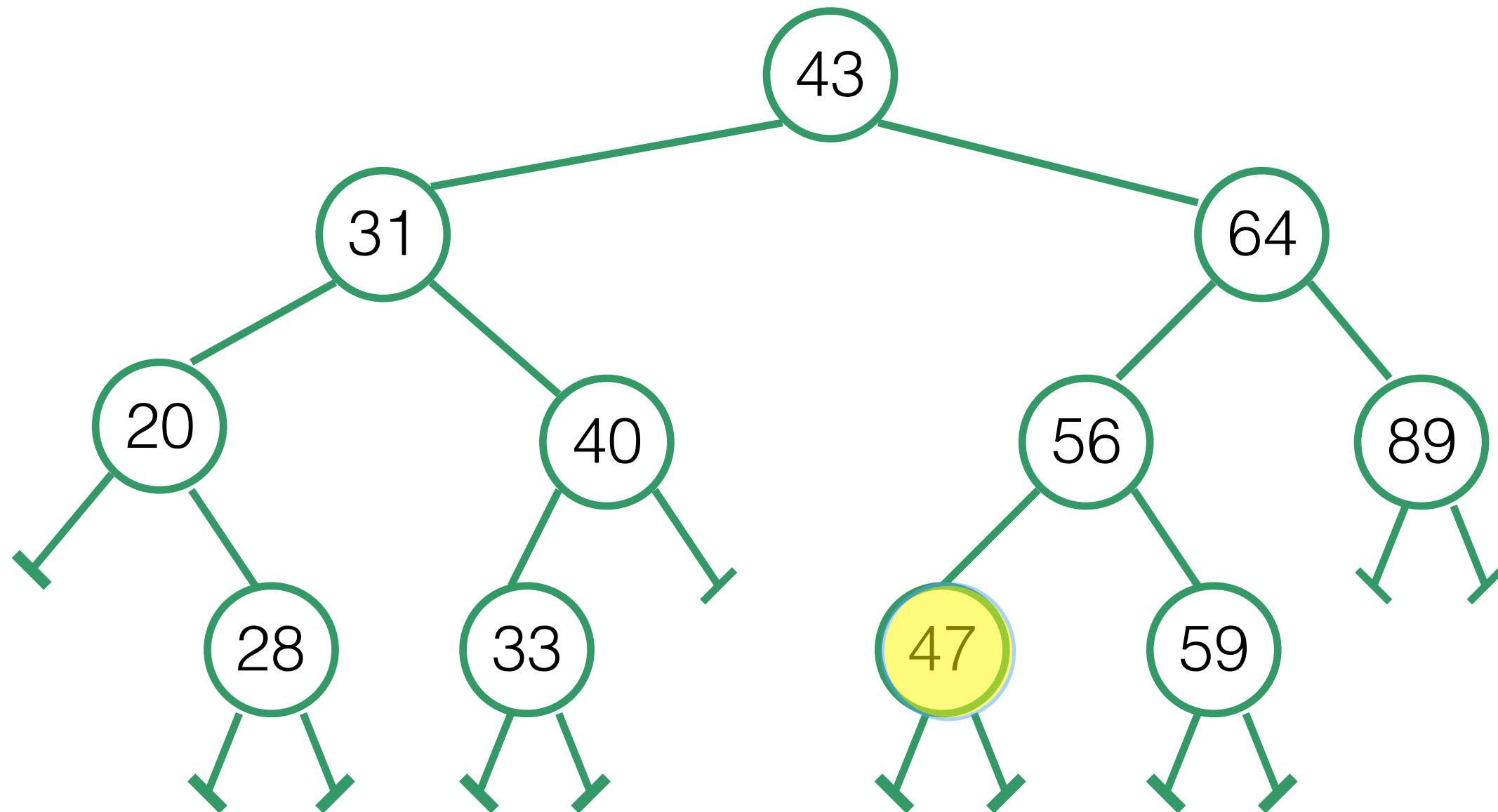
28	20	33	40
----	----	----	----

Example: Postorder



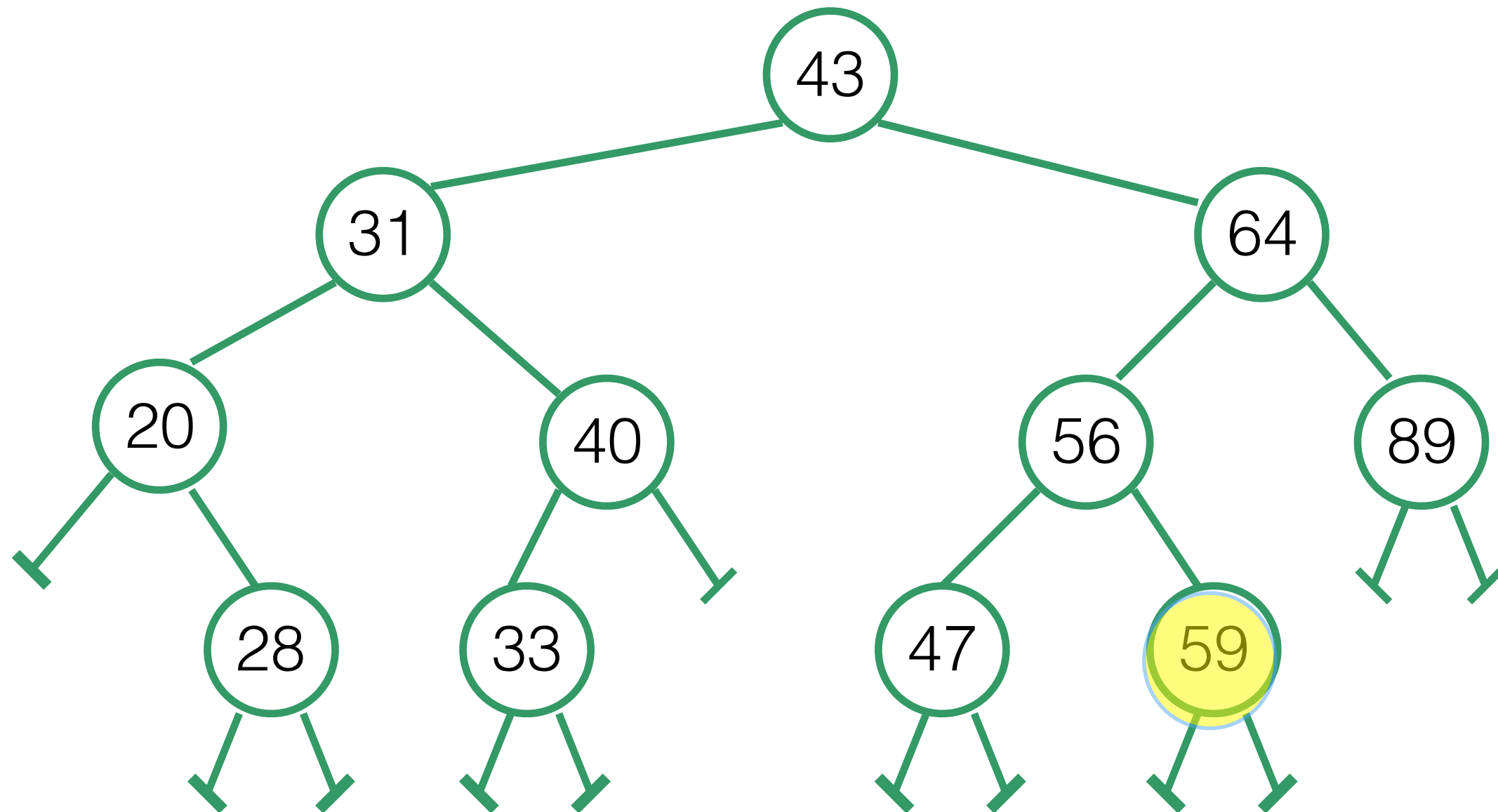
28	20	33	40	31
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Example: Postorder



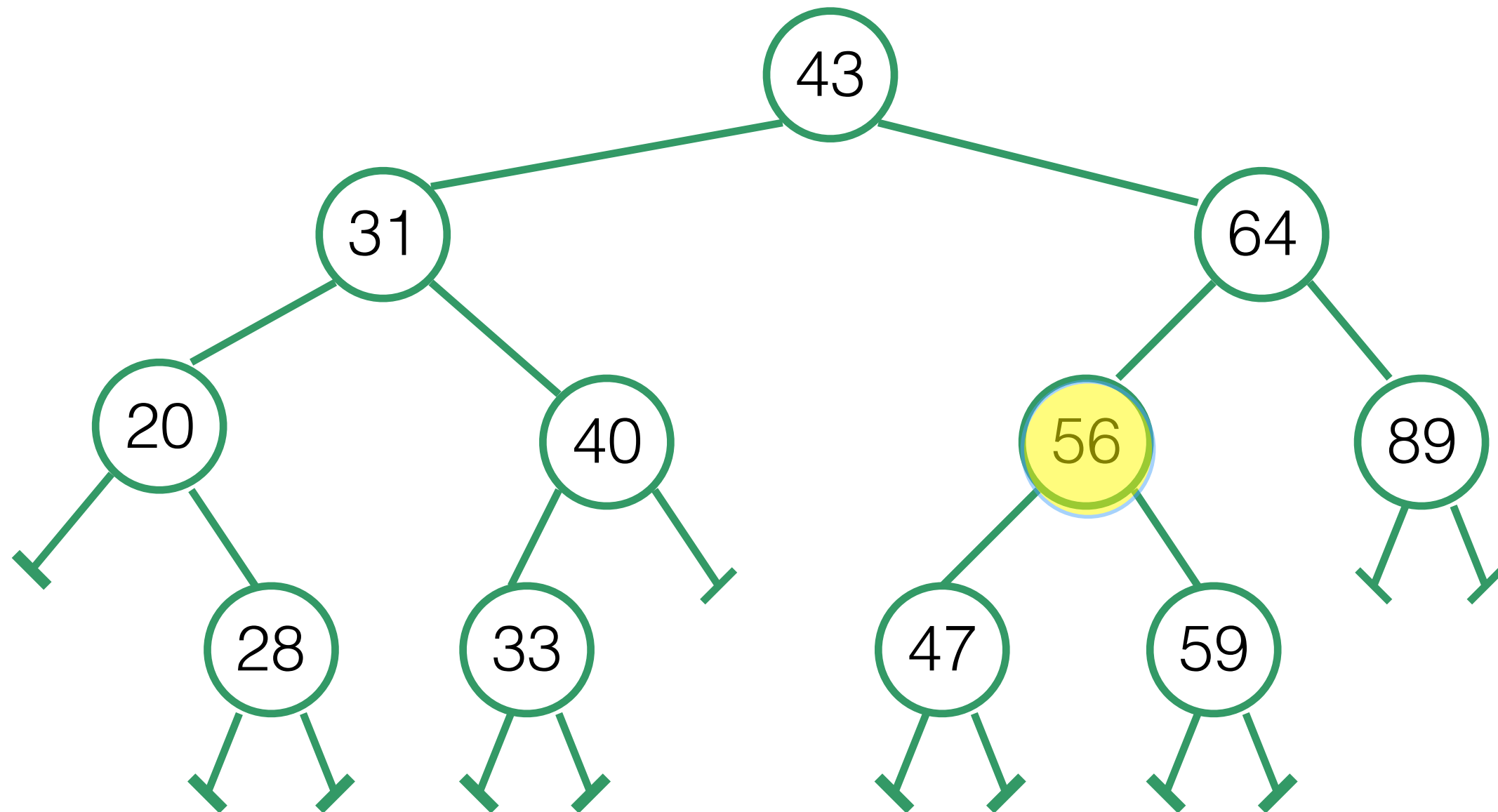
28	20	33	40	31	47
----	----	----	----	----	----

Example: Postorder



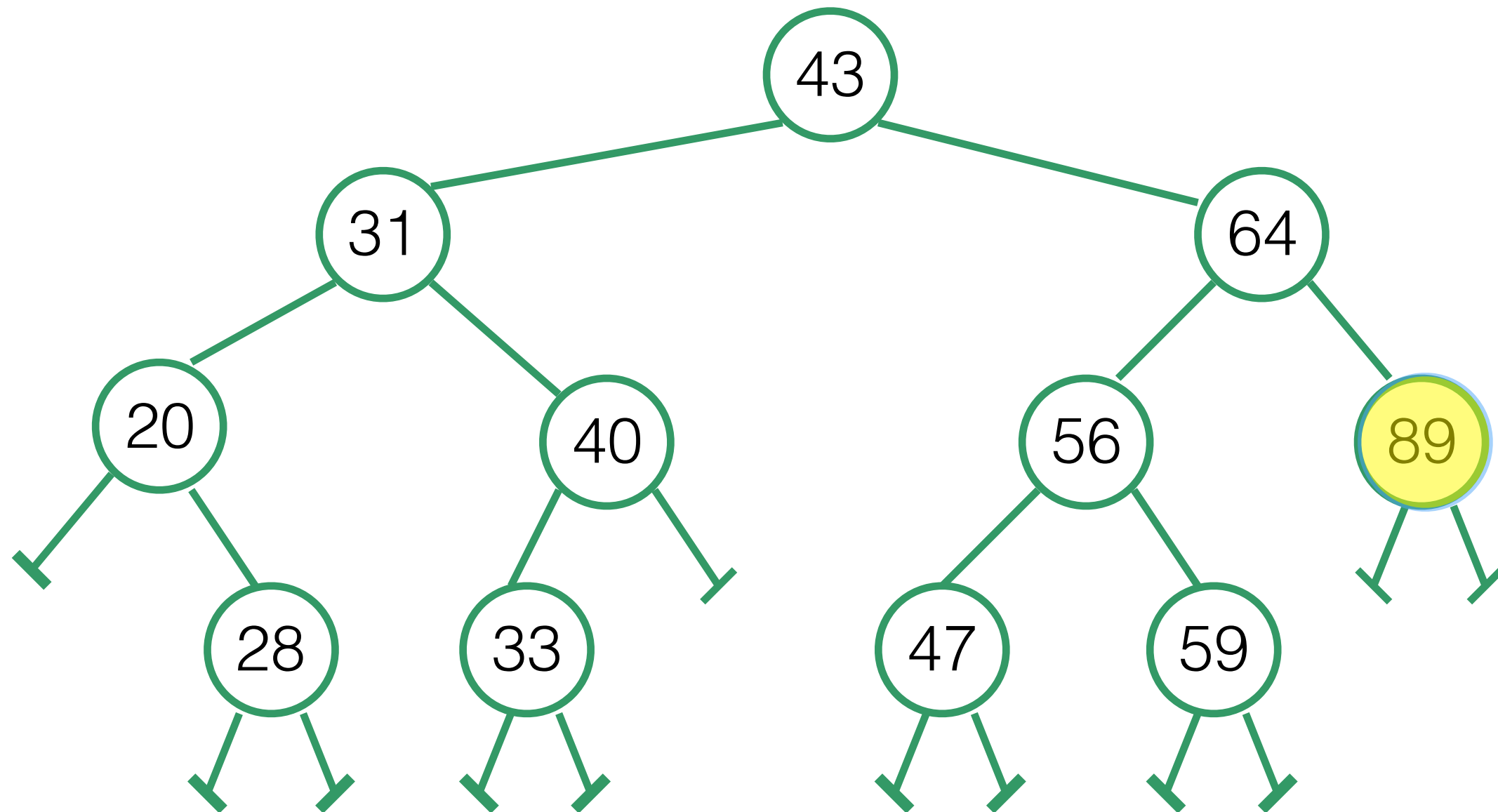
28	20	33	40	31	47	59
----	----	----	----	----	----	----

Example: Postorder



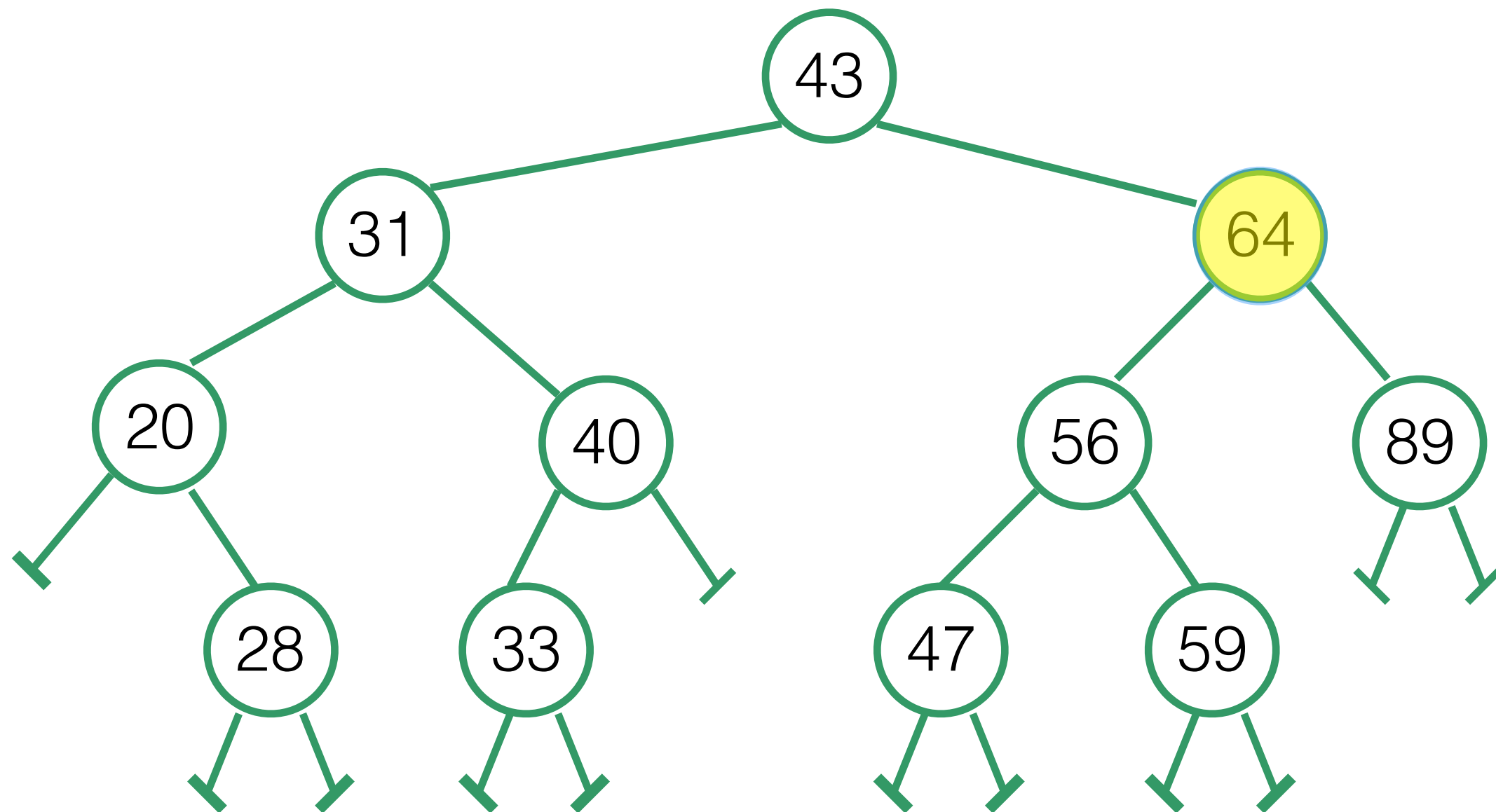
28	20	33	40	31	47	59	56
----	----	----	----	----	----	----	----

Example: Postorder



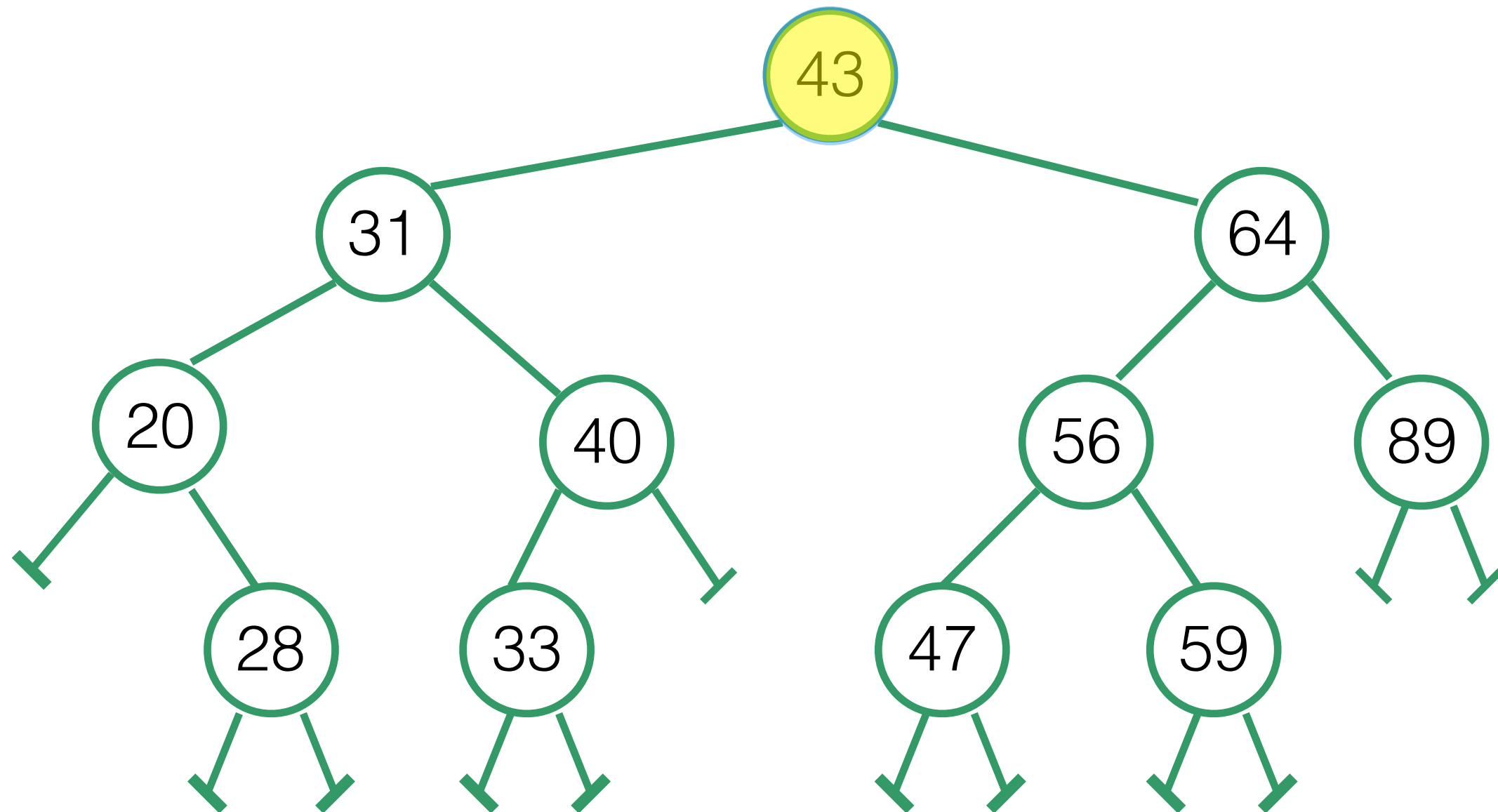
28	20	33	40	31	47	59	56	89
----	----	----	----	----	----	----	----	----

Example: Postorder



28	20	33	40	31	47	59	56	89	64
----	----	----	----	----	----	----	----	----	----

Example: Postorder



28	20	33	40	31	47	59	56	89	64	43
----	----	----	----	----	----	----	----	----	----	----