

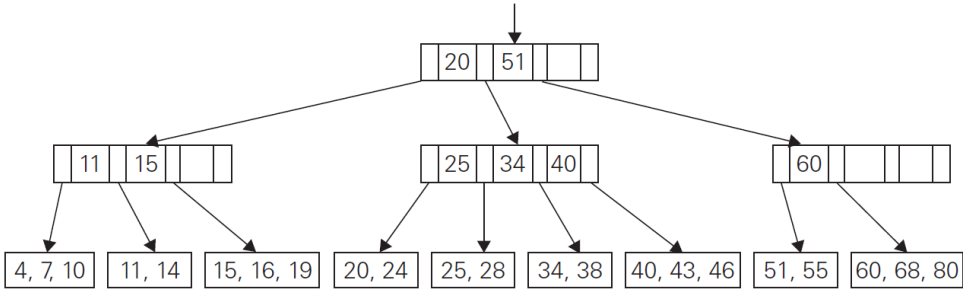
Name: _____

CSSE/MA 473 Worksheet for Class #19
January 12, 2023

B-Trees

1. In an M -ary B-tree, each node has at most _____ keys, and at most _____ children.
2. Depict a node of a 7-ary B-tree with the four keys 3, 7, 12, 21, as well as its subtrees, along with the range of values associated with each.
3. Give the structural properties of a B-tree of order $M \geq 2$.
 - (a) Data is stored:
 - (b) The root:
 - (c) Each other internal (non-leaf) node:
 - (d) Balance:
4. Why are B-trees a standard method of storing huge databases?
5. Why is a B-tree a space-for-time tradeoff?

6. The following B-tree has $M = 4$ and $L = 3$. Insert 30, then insert 31.



7. From the original tree, delete 55, then delete 80.

