Name: _____ **Email PID:** _____

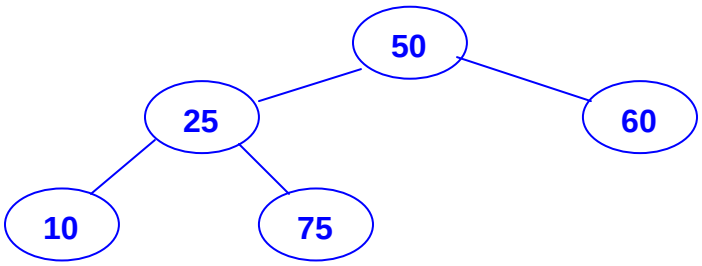
Question Consider the following definition of the term binary search tree:

A *binary search tree* is a binary tree which is either empty, or such that:

- the value in the left child of the root (if there is a left child) is smaller than the value in the root, and
- the value in the right child of the root (if there is a right child) is larger than or equal to the value in the root, and
- the left and right subtrees of the root are binary search trees (according to this definition).

Is this definition equivalent to the one given earlier? If not, draw a tree that satisfies this definition but not the earlier definition and explain why your example violates the earlier definition.

No, this is not equivalent. Consider the following tree:



The left subtree of the root contains a value that is larger than the value in the root.