CS 300 Data Structures
Problem Set #17: Binary Search Tree

1. Draw the **Binary Search Tree** that results when the following integer values are inserted into an initially empty tree in the order shown below

   45 40 62 13 54 56 69 42 41 16

   a) Draw the binary search tree

   b) Preorder traversal

   c) Inorder traversal

   d) Postorder traversal

2. Write a **recursive** member function to the `BinarySearchTree` header file, that calculates the `sum` of the values in the tree

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3. Write a **recursive** member function to the `BinarySearchTree` header file, named `count_parents`, which finds and returns the number of parent nodes (having 1 or 2 children) in the tree.

Please make necessary modifications to `BinarySearchTree` header file so that the following sample call could be done:

```
BinarySearchTree<int> tree; //creates a binary search tree object
…                           //assume that a set of numbers inserted into the tree
cout<<tree.count_parents(); //prints out the number of parents
                            //in the binary search tree created
```