1. Here is the stack at its deepest:

```
   mystery  X
      root null
   mystery  X
      root 5
   mystery  X
      root 1
   mystery  X
      root 8
     main 8
      r 8
```

2. The call returns the integer 6.

3. “Returns the number of nodes in the tree whose root is ‘root’.”

4. “numNodes” or “numberOfNodes”. “size” would be a poor name, because there is more than one way to measure the size of a tree.

5. Here are some reasonable internal comments:

   ```java
   public static int mystery(BinaryIntNode root){
       if (root.left == null && root.right == null)
           // The root is a leaf. So the tree rooted here as only 1 node.
           return 1;
       else if (root.left == null)
           // The root has only a right child. Include the size of the
           // right subtree in the total.
           return 1 + mystery(root.right);
       else if (root.right == null)
           // The root has only a left child. Include the size of the
           // left subtree in the total.
           return 1 + mystery(root.left);
       else
           // The root has two children. Include the size of both of
           // their subtrees in the total.
           return 1 + mystery(root.left) + mystery(root.right);
   }
   ```