CSc 227 — Program Design and Development
Spring 2014 (McCann)

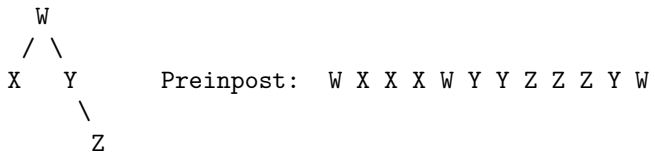
http://www.cs.arizona.edu/classes/cs227/spring14/

Section Activity #10: Preinpost Traversal

Your Names: _____

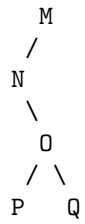
Directions: In groups of two (or three, if need be), complete the following activity. This section activity will be graded; all students in the group will receive the same score. Make sure that the names of all group members are on the page you submit to your section leader. Section Meeting 15 (2014/04/30-05/01)

Background: Imagine performing all three traversals (preorder, inorder, and postorder) at the same time in just one recursive method. Let's call that the *preinpost* traversal of a binary tree. In terms of the sailing photographers example from class, we take a picture of (e.g., visit) each peak of the island all three times we sail by it. For example, here's a small binary tree and its preinpost traversal:



Task: Answer the following three questions about preinpost traversals.

1. What is the preinpost traversal of the tree shown below?



2. When a preinpost order traversal displays a node's value three times in a row (e.g., X in the example traversal above), what property must the node containing that value possess?

(The final question is on the back . . .)

3. Write a recursive method named `preinpost()` that accepts a TreeNode reference and displays to the screen the preinpost traversal of the tree rooted at that node. If the tree is empty, print nothing. Assume that the expected `getData()`, `getLeftChild()`, and `getRightChild()` instance methods are available for TreeNode objects.

```
public void preinpost (TreeNode root) {









}
```