SHOW ALL YOUR WORK TO RECEIVE FULL CREDIT!

**Name**:_____

**Problem 1 :**   In a group of 10 people, each person has at least 5 friends. Show that the group can be seated in a circle, each person next to a friend.

**Problem 2:**   Given that a tree has 100 vertices of degree 1 and 20 of degree 6 and that one-half of the remaining vertices are of degree 4 and the rest of degree 2, determin the number of vertices of degree 2.