Problem 1
Pick two scientist who are not friends with each other: $a$ and $b$. There are $50 - 2 = 48$ more scientists other than them. $a$ is friends with 25 people in the other 48 people and so does $b$. But $25 + 25 = 50$ which is two more than 48. By the Pigeonhole Principle, $a$ and $b$ must have two common friends $c$ and $d$. Now we can sit $a, b, c, d$ clockwise (or counterclockwise) on the round table and every two neighbors will know each other.