1. There are 25 students in a math circle.
   (a) Prove that two students have birthdays in the same month.
   (b) Are there necessarily three such students?

2. There are 25 students in a math circle.
   Each of them is friends with exactly seven others in the circle.
   Okay?

3. There are 25 students in a math circle. Together they have gathered 300 nuts. Prove that two of them must have gathered the same number of nuts.

4. There are 2013 representatives of four Middle Earth races sitting around a giant round table: humans, dwarves, goblins and elves. Humans never sit next to goblins, and elves never sit next to dwarves. Prove that at least one pair of representatives sitting next to each other are from the same race.