

Fresno State Math Circle

Elementary

Sample Problems

Note: we will solve problems on various topics and of varying difficulty. Our goal is to get all participants interested in and excited about mathematics. We will strive to make sure that every participant both builds confidence and gets challenged. The following sample problems are just to give you a rough idea about some types and difficulty levels of the problems discussed in the Math Circle.

1. I have a favorite number. I added 3 to it, then multiplied the sum by 2, and then added 5. I got 27. What is my favorite number?
2. There are ducks and rabbits in a yard. Together, they have 12 heads and 30 legs. How many of the animals are ducks and how many are rabbits?
3. Fifty children came to an international math camp. 30 of them speak English. 15 speak French. 9 speak neither English nor French. How many children speak both English and French?
4. Oscar made a big cube using 64 small white cubes, and then painted all six sides of the big cube. How many of the small cubes have at least two sides painted?
5. Carmen likes to count. Today she started with 2 and counted by 4s: 2, 6, 10, 14, What is the 100th number in her sequence?
6. Doreen and Comlan are walking in the same direction around a circular table and counting chairs. They begin counting with different chairs. Doreen's 12th chair is Comlan's 3rd chair, while Doreen's 5th chair is Comlan's 18th chair. How many chairs are there at the table?
7. Marat has ten balls, numbered from 0 to 9. He gave four of the balls to Adnan and three to Agnes. Then each of the three friends multiplied the numbers on their balls. As the result, Marat got 0, Adnan got 72, and Agnes got 90. What is the sum of the numbers on the balls that Marat kept for himself?

In addition to solving problems such as above, the Math Circle participants will do hands-on activities, solve puzzles, play math games, and learn about various math competitions in the area, such as TriMathlon, Math Kangaroo, Math Contests, and Fresno State Math Field Day.