

Académie de Toulouse – sections européennes – session 2013

Subject # 15

*Please do not write on this exam paper
and give it back at the end of the test*

ARITHMETIC

1 - Ages

Paul is one year older than his wife. They have two big sons whose ages are also one year apart and twin girls, two years old. Paul notices that, on his birthday in 2013, the product of his age and his wife's age plus the sum of his children's ages is 2013.

What would have been the result if he had done this calculation thirteen years before?

2 - Counters

Paul and his sons are playing a game with a total of 24 counters in which the result is always that one person loses and two people win. The loser must then double the number of counters that each of the other players has at that time.

At the end of three games, each player has lost one game and each person has 8 counters. At the beginning, Paul had more counters than either of the others.

How many did he have at the start?

3 - Crackers

Today is Christmas and Paul's family has six crackers to pull. Each of the six people will pull two crackers, each with a different person.

In how many different ways can this be done?