Maths Circle India

TIFR-STCS Maths Circle Team

Session 2: April 29, 2022

2   How many friends?

It's lunchtime at school, and Ravi has been telling Hasan all about the party he went to the night before. Hasan, however, has begun to suspect that some of the stories that Ravi has been telling him about the party are probably made up on-the-spot, and could not possibly have happened. After all, could lemonade-flavoured-milk – the brand-new drink that Ravi tasted at this party, and of which he cannot stop singing praises – really exist? But, then, Hasan can't just contradict him, since he wasn't at the party. So he is looking hard for clues.

"Do you know, Hasan, I asked everyone at the party how many other people at the party they were friends with (including me of course!), and wrote down those numbers. Then, I also counted how many of the people at the party were my own friends, and wrote down that number too. And would you believe it! All those numbers were different from each other!", Ravi continued.

Hasan finally had the clue he wanted: "Caught you! Now I know you have been making up stories about the party!"

What did Hasan catch?