

# Maths Circle India

TIFR-STCS Maths Circle Team

Session 1: April 15, 2022

## 1 Keeping secrets

Arun lives in Ahmedabad, while Barun lives in Barauni. Arun needs to send his favourite story-book (called *Arun Barun*) to Barun. Luckily for Arun, Kiron travels regularly from Ahmedabad to Barauni and back. Unluckily for Arun, Kiron is also a huge story-book enthusiast and would start reading the book herself on the way. It is very important for Arun that his best friend Barun reads *Arun Barun* before Kiron does.

Arun has an old box with a latch that can be locked using a pad-lock (of the kind we put on door latches, but perhaps a bit smaller). Arun also knows that Kiron won't be able to open the lock and read the book if he just gives her the story-book locked inside the box (Arun will of course not give her the key to the lock!).

But, then, neither would Barun be able to read the book once Kiron delivers the book to him! What's the point of having the book if you can't read it?

What should Arun and Barun do?