

# DTP-Math-Circle: Session 2—Probability

Sept 16 2022

## 4 Counting to get odds

The probability of a boy or a girl being born is identical. If Raj has two children and at least one of them is a boy, what is the probability that he also has a daughter ? If Shashi has two children and the elder is a boy, what is the probability that the younger is a daughter?

For a best of 3 set tennis match between you and your friend, you have probability  $p$  of winning any set regardless of the outcomes of previous sets. Would you bet on the match finishing in two sets or three sets?

An airplane is built to be able to fly on one engine. If the plane's two engines operate independently, and each has a 1% chance of failing in any given four-hour flight, what is the chance the plane will fail to complete a four-hour flight due to engine failure?