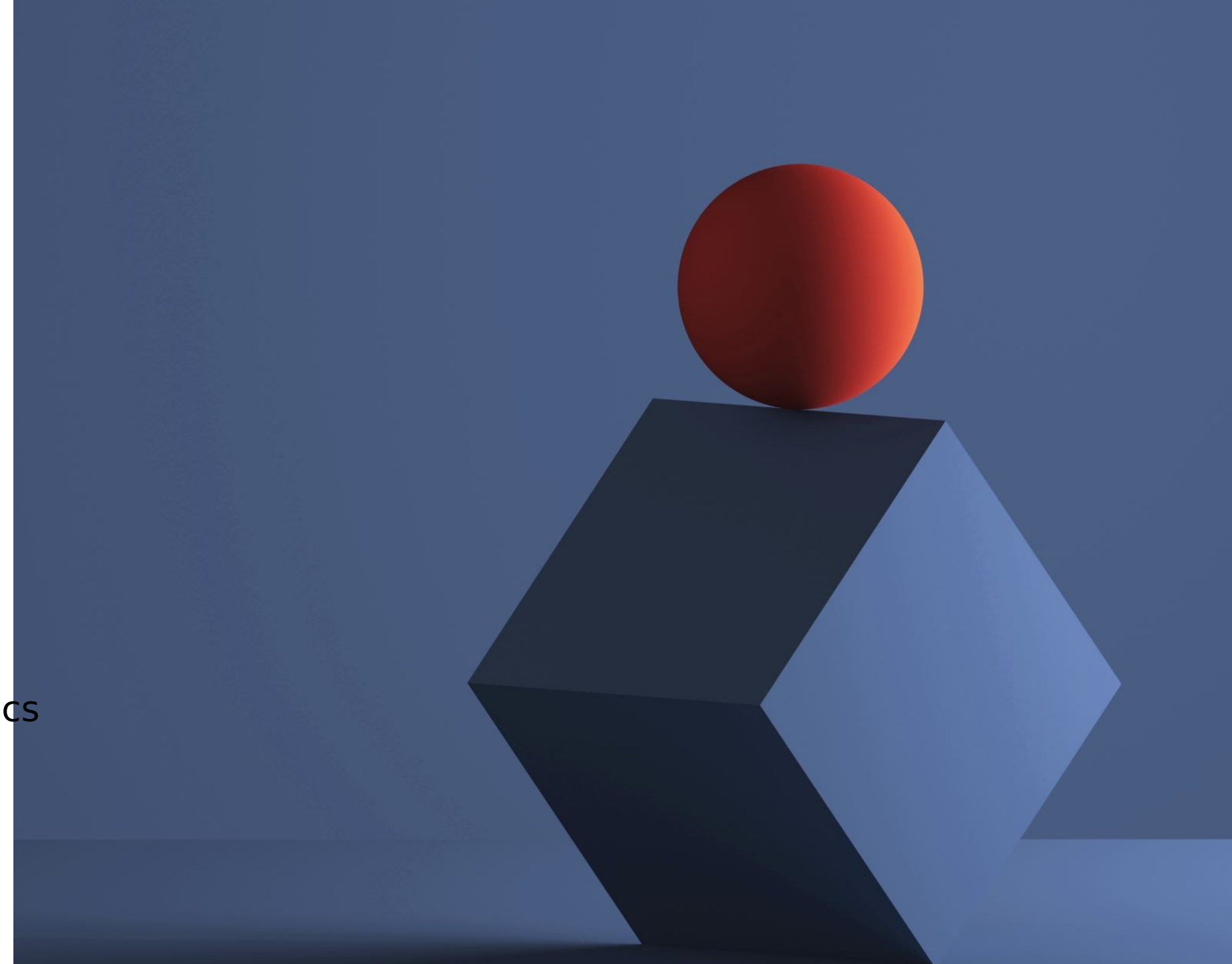
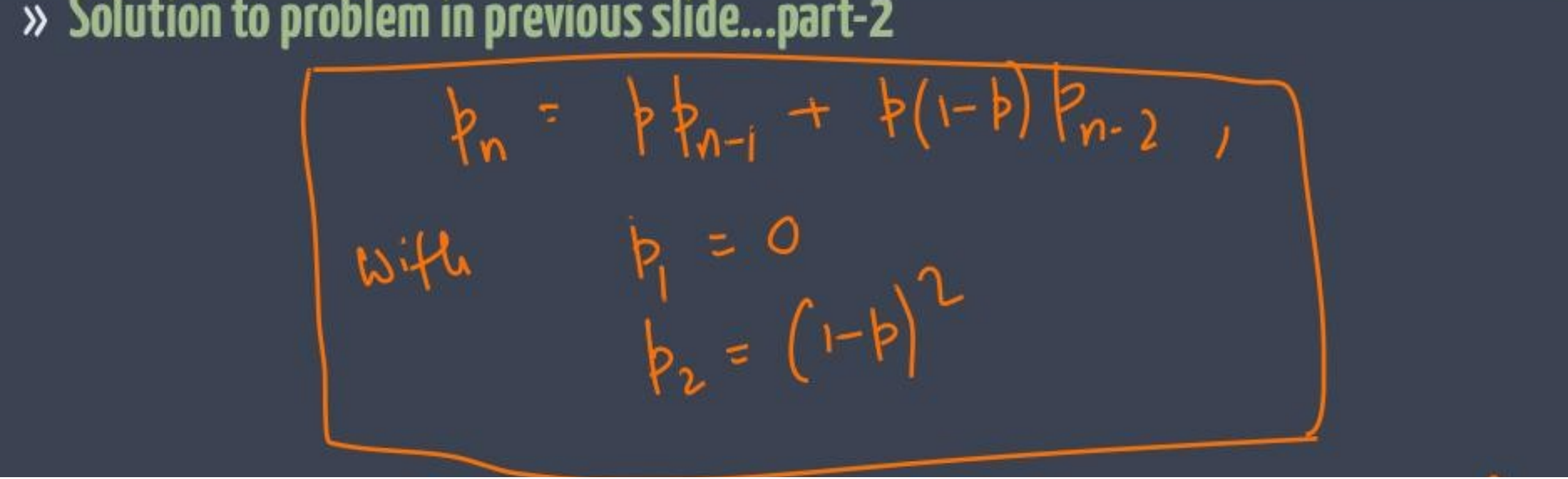
Tutorial 5

Probability and Statistics





Solution for recurrence from class

A coin is tossed until two successive tails are obtained. P(heads) = p. Find the probability that experiment is completed on n-th toss.

Question 1: Children and coins

1. N children are sitting in a circle.
2. Each child has one coin.
3. Each child chooses a neighbor (left/right) with 50% probability and gives their coin to that selected neighbor.
4. On average, how many children will be left without any coin?

Question 2

- In a sequence of Bernoulli trials with probability p for success, find the

1. probability that x successes will occur before y failures.

Question 3

- Colorblindness appears in 1 per cent of the people in a certain population.
- How large must a random sample (with replacements) be if the probability of its containing a colorblind person is to, be 0.95 or more?

Question 4

- A book of n pages contains on the average A misprints per page. Estimate the probability that at least one page will contain more than k misprints.