- 1. Pick a uniformly chosen point inside a unit square (a square of side length 1) and draw a circle of radius 1/3 around that point. Find the probability that the circle lies entirely inside the square.
- 2. We roll a fair die repeatedly until we see the number 4 appears and then we stop.
  - (a) What's the probability that we need at most 3 rolls?
  - (b) What's the probability that we needed an even number of die rolls.