Class 1/16, Activity 1

- You are an oracle that, when asked, says "yes" with probability *P* and "no" with probability 1 – *P*. How do you do this using only a fair, two-sided coin?
- In the programming language of your choice, how would you simulate flips of a fair, two-sided coin?
  - Do it. Simulate 10^6 flips. How many heads do you get?

Class 1/16, Activity 2

- In the programming language of your choice, how would you simulate draws from two weird 7-sided dice whose faces (showing 1 through 7 spots) have probabilities proportional to: $1{:}e{:}\pi{:}4{:}5{:}6{:}e^{\pi}$ respectively ?
  - Do it. Simulate 10^6 throws of the dice. How many times is the sum of the two dice equal to 8?
  - What should it be (in expectation) analytically?