

Math 540/640: Statistical Theory I

HW #1

Instructor: Songfeng (Andy) Zheng

Problem 1: The 38 equally likely positions on a roulette wheel are numbered 0, 00, 1, 2, ..., 36. The 0 and 00 are green. of the rest, half are black and half red. Find the probability that the outcome of a single spin is.

- a. red
- b. not black
- c. in the third “dozen” (25, ..., 36)

Problem 2: Sixty percent of the students at a certain school wear neither a ring nor a necklace. Twenty percent wear a ring and 30 percent wear a necklace. If one student is chosen randomly, what is the probability that this student is wearing

- a. a ring or a necklace;
- b. a ring and a necklace.

Problem 3: If 50% of families in a city subscribe to the morning newspaper, 65% of families subscribe to the afternoon newspaper, and 85% of the families subscribe to at least one of the two newspapers. What is the percentage of the family subscribe to both newspapers?

Problem 4: Tom thinks with probability 0.80 he will get “A” in physics and with probability 0.60 he will get “A” in chemistry. He also guess that the chance he will get “A” in both courses is 0.5. What is the probability that Tom will get “A” in exactly one of the two courses?