

Image Interpretation – Assignment 0

This assignment is on **Recap: Probability**. The exercises on this sheet are ungraded and optional.

Exercise 1.

A minor outbreak of cooties has occurred in a city. There are a million healthy inhabitants and one hundred infected ones. There are no visible symptoms for the infected citizens. A test is available that produces a positive result with 97.5% probability if the tested person is infected, and with 2.5% probability if the tested person is healthy. If a person tests positive, how high is the probability that he/she is infected? Try to identify the **prior** probability, the **likelihood**, and the **posterior** probability in your calculation.

Exercise 2.

A merchant has two bags of coins. The first bag contains 30 silver and 20 golden coins, while the second bag contains 10 silver and 40 golden coins. He chooses a bag randomly and picks a random coin inside of it. If he pulls a golden coin out, how high is the probability that he chose the first bag?