

## Baye's Rule

Group (1-3 people): \_\_\_\_\_

Suppose we believe that a certain disease is present in 1 out of every 1,000 people. A diagnostic test for the disease is 99% sensitive and 98% specific, meaning that if someone has the disease the test will be positive 99% of the time, and if someone does not have the disease the test will be negative 98% of the time.

- (1) What is the probability that someone has the disease if they test positive for it twice in a row?

- (2) What is the probability that someone does not have the disease if a single test result is negative?