Bayes' Theorem

Example #1a: Suppose a family has three children (and the probability of a girl is exactly 50%).

Q1: What is the probability the children are all girls?

Example #1b: Suppose you learned the family's first child is a girl.

Q2: What is the probability the children are all girls?

Example #2: Suppose we have a new method to test for use of a drug that is used by 0.5% of the general population. This new method is:
- 99% sensitive   (the result will be positive 99% of the time for drug users)
- 99% specific   (the result will be negative 99% of the time for non-drug users)

Q3: Given a positive test result, what is the probability that the person is a drug user?

Bronze Tablet Setup: