

## Bayesian Decision Theory

1. The microfilaria test is an imperfect indicator of heartworm disease in dogs (for example, if only male microfilaria are present, the test will give a False Negative). Suppose a veterinarian has seen the following results in her practice this year:

Microfilaria test	Heartworm?
Pos	Yes
Neg	No
Neg	No
Neg	No
Pos	No
Neg	No
Neg	Yes
Pos	No

- Calculate the *posterior probability* of having heartworm for a dog who has tested Pos for microfilaria at this clinic.

2. What is the purpose of the  $P(x)$  term in Bayes' equation?