

Suppose a fraction 5% of the circuits produced by a circuit manufacturer is defective. Historically, given that a circuit is defective, the inspector (wrongly) accepts the circuit 10% of the time, thinking it has no defect. If a circuit is not defective, he always correctly accepts it. Suppose that the inspector inspects 10 circuits.

- a) What is the probability that all 10 circuits in the sample are not defective?
- b) What is the probability that the inspector accepts a defective circuit?
- c) What is the probability that inspector accepts 9 (out of 10) circuits?
- d) Given that the inspector accepts a circuit, what is the probability that it has no defect?
- e) Given that the inspector accepts all 10 circuits, what is the probability that they all have no defect?