Reliability: Example

- Assume the failures of a computer system follows exponential distribution, and the probability of failure is 5% within 100 hours. What's the probability of the system working without failures in 1000 hours? (Hint: *ln(0.95)* = -0.05; *ln(0.61)* = -0.5).

$$P(t \le 100) = F(100) = 0.05$$

$$1 - e^{-100\lambda} = 0.05$$

$$\lambda = 0.0005$$

$$R(1000) = e^{-1000 \times 0.0005} = 0.6065$$