

Exponential Probability Distribution

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Exponential Distribution

An average of five calls per hour are received by a machine repair department. Beginning the observation at any point in time, compute the following probabilities

- (a) that the first call for service will arrive within ten minutes.

Exponential Distribution

- ▶ $\mu = \text{Average per hour} = 5.0$
- ▶ $\lambda = \mu = \text{Average per half hour} = 2.5$
- ▶ $P(X \leq 2.5)$

$$P(X \leq 2.5) = 1 - e^{-2.5} = 1 - 0.08208 = 0.91792$$