

Answer on Question #68034 – Math – Statistics and Probability

Question

the web site for xyz gets approximately seven visitors per minute. Suppose the number of web site visitors per minute follows a Poisson probability distribution

- (1) what is the mean time between visits to the web site?
- (2) what is the probability no one will access the web site in a 1 minute period?
- (3) what is the probability no one will access the web site in a 12 second period?

Solution

1) $\frac{1}{\mu} = \frac{1}{7} \text{ min.} \approx 8.6 \text{ sec.}$

2) $P(X = 0) = e^{-\mu} \frac{\mu^0}{0!} = e^{-7} = 0.0009.$

3) $\mu = \frac{7 \cdot 12}{60} = 1.4.$

$$P(X = 0) = e^{-\mu} \frac{\mu^0}{0!} = e^{-1.4} = 0.2466.$$