

Ex: On average, one shopper enters store every 15-secs
Q: What is prob. that in one min, 0 shoppers enter the store?

4 shoppers
& shoppers

Solution: Use Poisson

$\lambda = 4$ (people enter the store in 1 min on average).

$$X \sim \text{Poisson}(4)$$

$$P(X=k) = \frac{4^k e^{-4}}{k!}$$

$$P(X=0) = \frac{4^0 e^{-4}}{0!} = \frac{1 \cdot e^{-4}}{1} = e^{-4} = 0.08.$$

$0! = 1$

$$P(X=4) = \frac{4^4 e^{-4}}{4!} = 0.198.$$

$$P(X=8) = \frac{4^8 e^{-4}}{8!} = 0.030.$$
