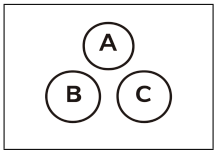
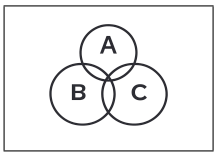
L Poisson Random Variable L

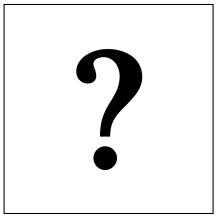


$\lambda = 1$



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

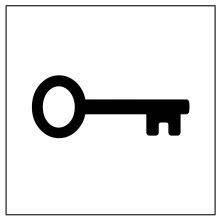
$P(X = 0) = e^{-1}\frac{1^0}{0!} = e^{-1} \approx \boxed{0.37}$



$\lambda = 3$

$X \sim \text{Pois}(3)$

Poisson Random Variable



$\lambda = 3$
$X \sim \text{Pois}(3)$

$$P(X \geq 2) = 1 - [P(X = 0) + P(X = 1)]$$

$$P(X \geq 2) = 1 - \left(e^{-3}\frac{3^0}{0!} + e^{-3}\frac{3^1}{1!}\right)$$

$$P(X \geq 2) = 1 - e^{-3}(1 + 3)$$

$$P(X \geq 2) = 1 - 0.0497871(1 + 3)$$

$$P(X \geq 2) \approx 1 - 4 \times 0.0497871$$

$$P(X \geq 2) \approx 1 - 0.19915$$

$$P(X \geq 2) \approx \boxed{0.80}$$