

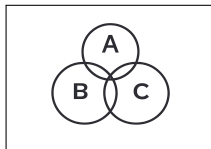
21

Discrete Distribution Poisson Variable

Q

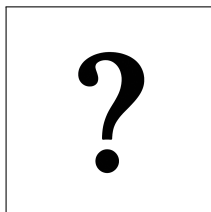


$$\lambda = 1$$



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

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



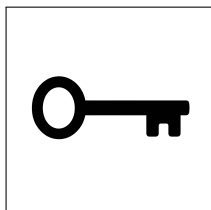
$$n = 120$$

$$p = 0.03$$

21

Discrete Distribution
Poisson Variable

Q



$$n = 120$$
$$p = 0.03$$

$$\lambda = np = 120 \times 0.03 = 3.6$$

$$X \sim \text{Pois}(3.6)$$

$$P(X = 2) = e^{-3.6} \frac{3.6^2}{2!} = e^{-3.6} \frac{12.96}{2} = 6.48 e^{-3.6} \approx 6.48 \times 0.0273237 \approx 0.1771$$