

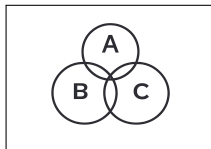
21

Discrete Distribution Poisson Variable

H

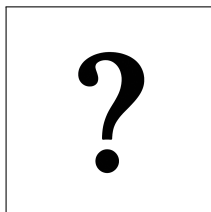


$$\lambda = 1$$



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

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



$$\lambda = 7.5$$

$$P(X \geq 6) = ?$$

21

Discrete Distribution
Poisson Variable

H



$$\lambda = 7.5$$

$$P(X \geq 6) = ?$$

$$P(X \geq 6) = 1 - P(X \leq 5)$$

$$P(X \geq 6) = 1 - \sum_{k=0}^5 e^{-\lambda} \frac{\lambda^k}{k!}$$

$$P(X \geq 6) = 1 - \sum_{k=0}^5 e^{-7.5} \frac{7.5^k}{k!}$$

$$P(X \geq 6) = \sum_{k=0}^5 e^{-7.5} \frac{7.5^k}{k!}$$

$$P(X \geq 6) \approx 0.2414$$

$$P(X \geq 6) \approx 1 - 0.2414 = \boxed{0.7586}$$