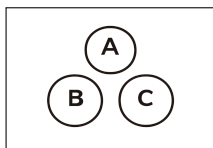


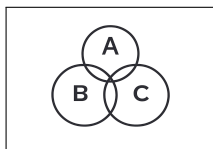
21

Discrete Distribution Poisson Variable

K

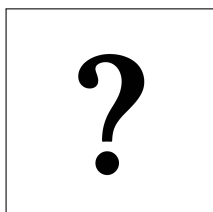


$$\lambda = 1$$



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

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



$$X \sim \text{Pois}(\lambda = 0.96)$$

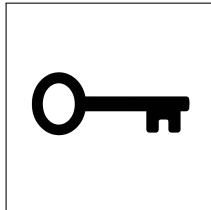
$$C = 160 + 40X^2$$

$$E[C] =$$

21

Discrete Distribution
Poisson Variable

K



$$X \sim \text{Pois}(\lambda = 0.96)$$

$$C = 160 + 40X^2$$

$$E[C] =$$

$$E[X^2] = \text{Var}(X) + [E(X)]^2$$

$$E[X^2] = \lambda + \lambda^2$$

$$E[X^2] = 0.96 + (0.96)^2$$

$$E[X^2] = 0.96 + 0.9216$$

$$E[X^2] = 1.8816$$

$$E[C] = 160 + 40 E[X^2]$$

$$E[C] = 160 + 40 \times 1.8816$$

$$E[C] = 160 + 75.264$$

$$E[C] = 235.264$$