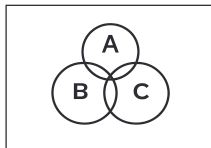


**J**

# Geometric Random Variable

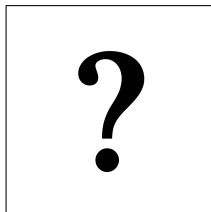
**J**

$$p = 0.25$$
$$X = \{1, 2, 3, \dots\}$$
$$PMF = ?$$
$$E[X] = ?$$



$$P(X = x) = (1 - p)^{x-1}p$$
$$P(X = 1) = 0.25$$
$$P(X = 2) = 0.75(0.25) = 0.1875$$
$$P(X = 3) = 0.75^2(0.25) = 0.1406$$

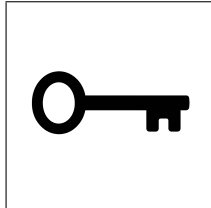
$$E[X] = 1/p = 1/0.25 = \boxed{4}$$



$$X = \{1, 2, 3, \dots\}$$
$$p = 0.20$$

**J**

# Geometric Random Variable

**J**

$$X = \{1, 2, 3, \dots\}$$
$$p = 0.20$$

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$$E[X] = \frac{1}{0.20} = 5$$