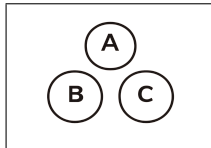
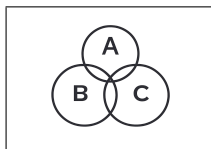


# Expected Value & Variance Binomial Distribution



$$n = 6$$
$$p = \frac{1}{2}$$



$$E[X] = np = 6 \cdot \frac{1}{2} = \boxed{3}$$

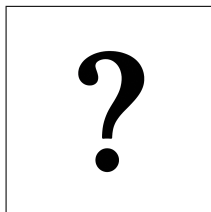
$$\text{Var}(X) = np(1-p) = 3 \cdot \frac{1}{2} = \boxed{\frac{3}{2}}$$

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

$$E[X^2] = \frac{3}{2} + 3^2$$

$$E[X^2] = \frac{3}{2} + 9$$

$$E[X^2] = \boxed{\frac{21}{2}}$$



$$n = 15$$

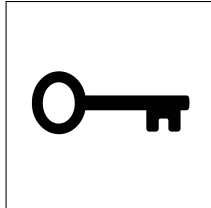
$$p = 0.75$$

$$E[X] = ?$$

$$\text{Var}(X) = ?$$



## Expected Value & Variance Binomial Distribution



$$\begin{aligned}n &= 15 \\p &= 0.75 \\E[X] &= ? \\Var(X) &= ?\end{aligned}$$

---

$$E[X] = np = 15 \times 0.75 = 11.25$$

$$Var(X) = np(1 - p) = 15 \times 0.75 \times 0.25 = 2.8125$$