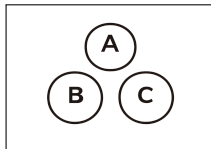


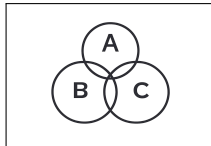
15 Discrete Distribution Expected Value Variable



$$X = \{1, 2, 3, 4, 5, 6\}$$

$$P(1) = P(2) = P(3) = P(4) = P(5) = P(6) = \frac{1}{6}$$

$$E[X] = ?$$



$$E[X] = \sum xP(X = x)$$

$$E[X] = \frac{1}{6}(1 + 2 + 3 + 4 + 5 + 6)$$

$$E[X] = \frac{1}{6}(21)$$

$$E[X] = \frac{21}{6}$$

$$E[X] = 3.5$$



$$P(x < -2) = 0$$

$$P(-2 \leq x < 0) = 0.25$$

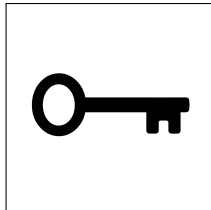
$$P(0 \leq x < 2.2) = 0.3$$

$$P(2.2 \leq x < 4) = 0.9$$

$$P(x \geq 4) = 1$$

$$E(X) = ?$$

15 Discrete Distribution Expected Value Variable



$$P(x < -2) = 0$$

$$P(-2 \leq x < 0) = 0.25$$

$$P(0 \leq x < 2.2) = 0.3$$

$$P(2.2 \leq x < 4) = 0.9$$

$$P(x \geq 4) = 1$$

$$E(X) = ?$$

$$E(X) = \sum_x xP(X = x)$$

$$E(X) = \sum x \times p(x) = (-2)(0.25) + (2.2)(0.3) + (3)(0.9) + (4)(0.1)$$

$$E(X) = -0.5 + 0.66 + 2.7 + 0.4 = 3.26$$