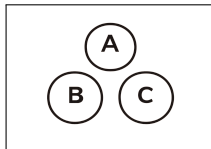


15 Discrete Distribution Expected Value Variable

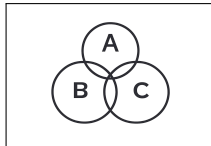
E



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

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

$$E[X] = ?$$



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

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

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

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

$$E[X] = 3.5$$



$$P(X = 0) = 0.9875$$

$$P(X = 400) = 0.01$$

$$P(X = 800) = 0.0025$$

$$E(X) = ?$$

15 Discrete Distribution Expected Value Variable

E



$$P(X = 0) = 0.9875$$

$$P(X = 400) = 0.01$$

$$P(X = 800) = 0.0025$$

$$E(X) = ?$$

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

$$E(X) = 0 \times 0.9875 + 400 \times 0.01 + 800 \times 0.0025$$

$$E(X) = 0 + 4 + 2 = 6$$