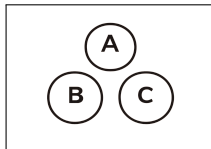


15 Discrete Distribution Expected Value Variable

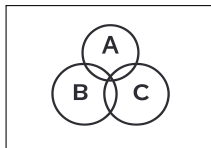
N



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

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

$$E[X] = ?$$



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

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

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

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

$$E[X] = 3.5$$



$$P(X = 20) = 0.15$$

$$P(X = 30) = 0.10$$

$$P(X = 40) = 0.05$$

$$P(X = 50) = 0.20$$

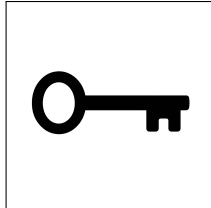
$$P(X = 70) = 0.10$$

$$P(X = 80) = 0.30$$

$$E(X) = ?$$

15 Discrete Distribution Expected Value Variable

N



$$P(X = 20) = 0.15$$

$$P(X = 30) = 0.10$$

$$P(X = 40) = 0.05$$

$$P(X = 50) = 0.20$$

$$P(X = 70) = 0.10$$

$$P(X = 80) = 0.30$$

$$E(X) = ?$$

$$E(X) = \sum xp(x)$$

$$E(X) = 20(0.15) + 30(0.10) + 40(0.05) + 50(0.20)$$

$$+ 60(0.10) + 70(0.10) + 80(0.30) + 3.00 + 3.00$$

$$+ 2.00 + 10.00 + 6.00 + 7.00 + 24.00$$

$$E(X) = 55.00$$