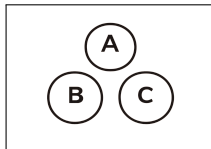


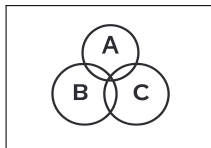
16 Discrete Distribution Expected Value Function



$$Y = 20 - 2X$$

$$E(X) = 6$$

$$E(Y) = ?$$

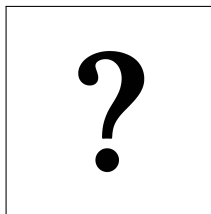


$$E(Y) = E(20 - 2X)$$

$$E(20 - 2X) = E(20) - 2E(X)$$

$$E(20) = 20$$

$$E(Y) = 20 - 2(6) = 20 - 12 = 8$$



$$P(X = 0) = 1 - p$$

$$P(X = 1) = p$$

$$E(X^2) - [E(X)]^2 = ?$$

16 Discrete Distribution

Expected Value Function



$$P(X = 0) = 1 - p$$

$$P(X = 1) = p$$

$$E(X^2) - [E(X)]^2 = ?$$

$$E(X) = 0 \cdot (1 - p) + 1 \cdot p = \boxed{p}$$

$$E(X^2) = 0^2 \cdot (1 - p) + 1^2 \cdot p = \boxed{p}$$

$$E(X^2) - [E(X)]^2 = p - p^2 = \boxed{p(1 - p)}$$