

100. A car dealership sells 0, 1, or 2 luxury cars on any day. When selling a car, the dealer also tries to persuade the customer to buy an extended warranty for the car. Let X denote the number of luxury cars sold in a given day, and let Y denote the number of extended warranties sold.

$$P(X = 0, Y = 0) = \frac{1}{6}$$

$$P(X = 1, Y = 0) = \frac{1}{12}$$

$$P(X = 1, Y = 1) = \frac{1}{6}$$

$$P(X = 2, Y = 0) = \frac{1}{12}$$

$$P(X = 2, Y = 1) = \frac{1}{3}$$

$$P(X = 2, Y = 2) = \frac{1}{6}$$

What is the variance of X ?

- (A) 0.47
- (B) 0.58
- (C) 0.83
- (D) 1.42
- (E) 2.58