

**236.** For each policyholder, losses  $X_1, \dots, X_n$ , conditional on  $\Theta$ , are independently and identically distributed with mean,

$$\mu(\theta) = E(X_j | \Theta = \theta), \quad j = 1, 2, \dots, n$$

and variance,

$$v(\theta) = \text{Var}(X_j | \Theta = \theta), \quad j = 1, 2, \dots, n.$$

You are given:

- (i) The Bühlmann credibility assigned for estimating  $X_5$  based on  $X_1, \dots, X_4$  is  $Z = 0.4$ .
- (ii) The expected value of the process variance is known to be 8.

Calculate  $\text{Cov}(X_i, X_j)$ ,  $i \neq j$ .

- (A) Less than  $-0.5$
- (B) At least  $-0.5$ , but less than  $0.5$
- (C) At least  $0.5$ , but less than  $1.5$
- (D) At least  $1.5$ , but less than  $2.5$
- (E) At least  $2.5$