

**133.** You are given:

- (i) The annual number of claims for an insured has probability function:

$$p(x) = \binom{3}{x} q^x (1-q)^{3-x}, \quad x = 0, 1, 2, 3$$

- (ii) The prior density is  $\pi(q) = 2q$ ,  $0 < q < 1$ .

A randomly chosen insured has zero claims in Year 1.

Using Bühlmann credibility, estimate the number of claims in Year 2 for the selected insured.

- (A) 0.33  
(B) 0.50  
(C) 1.00  
(D) 1.33  
(E) 1.50