

181. You are given:

- (i) The number of claims in a year for a selected risk follows a Poisson distribution with mean λ .
- (ii) The severity of claims for the selected risk follows an exponential distribution with mean θ .
- (iii) The number of claims is independent of the severity of claims.
- (iv) The prior distribution of λ is exponential with mean 1.
- (v) The prior distribution of θ is Poisson with mean 1.
- (vi) A priori, λ and θ are independent.

Using Bühlmann's credibility for aggregate losses, determine k .

- (A) 1
- (B) $4/3$
- (C) 2
- (D) 3
- (E) 4