154. You are given:

(v) Claim counts follow a Poisson distribution with mean λ.

(vi) Claim sizes follow a lognormal distribution with parameters μ and σ.

(vii) Claim counts and claim sizes are independent.

(viii) The prior distribution has joint probability density function:

$$f(\lambda, \mu, \sigma) = 2\sigma, \ 0 < \lambda < 1, \ 0 < \mu < 1, \ 0 < \sigma < 1$$

Calculate Bühlmann's *k* for aggregate losses.

(A) Less than 2

(B) At least 2, but less than 4

(C) At least 4, but less than 6

(D) At least 6, but less than 8

(E) At least 8