

65. You are given the following information about a general liability book of business comprised of 2500 insureds:

- (i) $X_i = \sum_{j=1}^{N_i} Y_{ij}$ is a random variable representing the annual loss of the i^{th} insured.
- (ii) $N_1, N_2, \dots, N_{2500}$ are independent and identically distributed random variables following a negative binomial distribution with parameters $r = 2$ and $\beta = 0.2$.
- (iii) $Y_{i1}, Y_{i2}, \dots, Y_{iN_i}$ are independent and identically distributed random variables following a Pareto distribution with $\alpha = 3.0$ and $\theta = 1000$.
- (iv) The full credibility standard is to be within 5% of the expected aggregate losses 90% of the time.

Using classical credibility theory, determine the partial credibility of the annual loss experience for this book of business.

- (A) 0.34
- (B) 0.42
- (C) 0.47
- (D) 0.50
- (E) 0.53