

242. You are given:

- (i) In a portfolio of risks, each policyholder can have at most two claims per year.
- (ii) For each year, the distribution of the number of claims is:

Number of Claims	Probability
0	0.10
1	$0.90 - q$
2	q

- (iii) The prior density is:

$$\pi(q) = \frac{q^2}{0.039}, \quad 0.2 < q < 0.5$$

A randomly selected policyholder had two claims in Year 1 and two claims in Year 2. For this insured, determine the Bayesian estimate of the expected number of claims in Year 3.

- (A) Less than 1.30
- (B) At least 1.30, but less than 1.40
- (C) At least 1.40, but less than 1.50
- (D) At least 1.50, but less than 1.60
- (E) At least 1.60