

15. You are given:

- (i) The probability that an insured will have at least one loss during any year is p .
- (ii) The prior distribution for p is uniform on $[0, 0.5]$.
- (iii) An insured is observed for 8 years and has at least one loss every year.

Determine the posterior probability that the insured will have at least one loss during Year 9.

- (A) 0.450
- (B) 0.475
- (C) 0.500
- (D) 0.550
- (E) 0.625