

210. Your company sells a product that pays the cost of nursing home care for the remaining lifetime of the insured.

- (i) Insureds who enter a nursing home remain there until death.
- (ii) The force of mortality, μ , for each insured who enters a nursing home is constant.
- (iii) μ is uniformly distributed on the interval $[0.5, 1]$.
- (iv) The cost of nursing home care is 50,000 per year payable continuously.
- (v) $\delta = 0.045$

Calculate the actuarial present value of this benefit for a randomly selected insured who has just entered a nursing home.

- (A) 60,800
- (B) 62,900
- (C) 65,100
- (D) 67,400
- (E) 69,800