

- 45.** Your company is competing to sell a life annuity-due with an actuarial present value of 500,000 to a 50-year old individual.

Based on your company's experience, typical 50-year old annuitants have a complete life expectancy of 25 years. However, this individual is not as healthy as your company's typical annuitant, and your medical experts estimate that his complete life expectancy is only 15 years.

You decide to price the benefit using the issue age that produces a complete life expectancy of 15 years. You also assume:

- (i) For typical annuitants of all ages, $l_x = 100(\omega - x)$, $0 \leq x \leq \omega$.
- (ii) $i = 0.06$

Calculate the annual benefit that your company can offer to this individual.

- (A) 38,000
- (B) 41,000
- (C) 46,000
- (D) 49,000
- (E) 52,000