

263. For (30) and (40), you are given:

- (i) Their future lifetimes are independent.
- (ii) Deaths of (30) and (40) are uniformly distributed over each year of age.
- (iii) $q_{30} = 0.4$
- (iv) $q_{40} = 0.6$

Calculate ${}_{0.25}q_{30:40.5}^2$.

- (A) 0.0134
- (B) 0.0166
- (C) 0.0221
- (D) 0.0275
- (E) 0.0300