

3. For a special whole life insurance on (x) , payable at the moment of death:

(i) $\mu_{x+t} = 0.05, t > 0$

(ii) $\delta = 0.08$

(iii) The death benefit at time t is $b_t = e^{0.06t}, t > 0$.

(iv) Z is the present value random variable for this insurance at issue.

Calculate $\text{Var}(Z)$.

(A) 0.038

(B) 0.041

(C) 0.043

(D) 0.045

(E) 0.048