

268. Z is the present value random variable for an insurance on the lives of Bill and John. This insurance provides the following benefits:

- (1) 500 at the moment of Bill's death if John is alive at that time; and
- (2) 1000 at the moment of John's death if Bill is dead at that time.

You are given:

- (i) Bill's survival function follows $l_x = 100(85 - x)$, $0 \leq x \leq 85$.
- (ii) John's survival function follows $l_x = 100(84 - x)$, $0 \leq x \leq 84$
- (iii) Bill and John are both age 80.
- (iv) Bill and John have independent future lifetimes.
- (v) $i = 0$.

Calculate $E[Z]$.

- (A) 600
- (B) 650
- (C) 700
- (D) 750
- (E) 800