

82. Don, age 50, is an actuarial science professor. His career is subject to two decrements:

(i) Decrement 1 is mortality. The associated single decrement table follows

$$l_x = 100 - x, 0 \leq x \leq 100.$$

(ii) Decrement 2 is leaving academic employment, with

$$\mu_{50+t}^{(2)} = 0.05, \quad t \geq 0$$

Calculate the probability that Don remains an actuarial science professor for at least five but less than ten years.

(A) 0.22

(B) 0.25

(C) 0.28

(D) 0.31

(E) 0.34