

78. For a fully continuous whole life insurance of 1 on (40), you are given:

(i) Mortality follows $l_x = 10(100 - x)$, $0 \leq x \leq 100$.

(ii) $i = 0.05$

(iii) The following annuity-certain values:

$$\bar{a}_{40|} = 17.58$$

$$\bar{a}_{50|} = 18.71$$

$$\bar{a}_{60|} = 19.40$$

Calculate the benefit reserve at the end of year 10 for this insurance.

(A) 0.075

(B) 0.077

(C) 0.079

(D) 0.081

(E) 0.083