For a special fully discrete 2–year endowment insurance of 1000 on (x), you are given:  
(i) The first year benefit premium is 668.  
(ii) The second year benefit premium is 258.

(iii) d = 0.06  
Calculate the level annual premium using the equivalence principle.

(A) 469 (B) 479 (C) 489 (D) 499 (E) 509

For a fully discrete whole life insurance of 1000 on (60), you are given:  
(i) i = 0.06  
(ii) Mortality follows the Illustrative Life Table, except that there are extra mortality risks at age 60 such that q60 = 0.015. Calculate the annual benefit premium for this insurance.

(A) 31.5 (B) 32.0 (C) 32.1 (D) 33.1 (E) 33.2

For a special whole life insurance on (35), you are given:  
(i) The annual benefit premium is payable at the beginning of each year.

(ii) The death benefit is equal to 1000 plus the return of all benefit premiums paid in the past without interest.  
(iii) The death benefit is paid at the end of the year of death.  
(iv) A35 = 0.42898

(v) (IA)35 = 6.16761  
(vi) i = 0.05

Calculate the annual benefit premium for this insurance.  
(A) 73.66 (B) 75.28 (C) 77.42 (D) 78.95 (E) 81.66

Becky is age 65 and just newly retired. She has a total personal savings of 1,000,000.

She wants guaranteed income while alive. In exchange for a single payment of 1,000,000, an insurance company promised her an annual payment (at the beginning of each year) of B with:

• the first 10 payments guaranteed, whether she is alive or not, and

• the subsequent payments made provided she is alive.

You are given:

• i=0.05

65 = 10.263

75 = 7.448

65:10 = 7.095

Calculate B.