

## Solution # 295

Death benefit is 4 times the salary at death if the individual is employed currently and younger than 65

$S_x$  denotes the salary earned in the year of age  $x$  to  $x+1$

$i = 0.05$  Deaths occur mid-year

APV (Death Benefit)

Year	Salary-Based Benefit	Probability	Discount
1	$100,000 \cdot 4 \cdot S_{62}/S_{62}$	$d_{62}^{(2)} / l_{62}^{(T)}$	$v^{0.5}$
2	$100,000 \cdot 4 \cdot S_{63}/S_{62}$	$d_{63}^{(2)} / l_{62}^{(T)}$	$v^{1.5}$
3	$100,000 \cdot 4 \cdot S_{64}/S_{62}$	$d_{64}^{(2)} / l_{62}^{(T)}$	$v^{2.5}$

$$\left( \frac{4 \cdot 100,000}{l_{62}^{(T)} \cdot S_{62}} \right) \left[ S_{62} \cdot d_{62}^{(2)} v^{0.5} + S_{63} \cdot d_{63}^{(2)} v^{1.5} + S_{64} \cdot d_{64}^{(2)} v^{2.5} \right]$$

$$= \left( \frac{400,000}{3.589(52,860)} \right) \left( 3.589(213) v^{0.5} + 3.643(214) v^{1.5} + 3.698(215) v^{2.5} \right)$$

$$= 4,585$$

(E)