

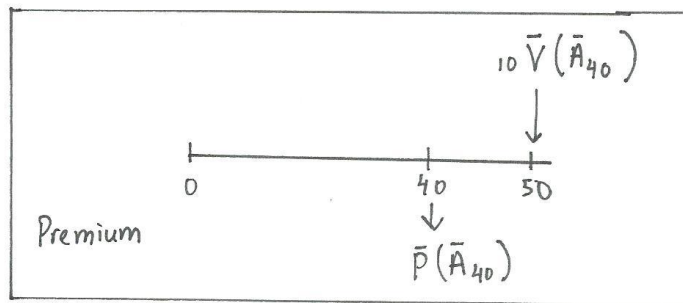
MLC Question 78

$$\bar{A}_x = \frac{\bar{a}_{w-x}}{w-x} \quad \bar{a}_x = \frac{1-\bar{A}_x}{\delta} \quad \delta = \ln(1+i)$$

$${}_k\bar{V}(\bar{A}_x) = \bar{A}_{x+k} - \bar{P}(\bar{A}_x)\bar{a}_{x+k}$$

$${}_{10}\bar{V}(\bar{A}_{40}) = \bar{A}_{50} - \bar{P}(\bar{A}_{40})\bar{a}_{50}$$

$\bar{P}(\bar{A}_{40})$  - premium for a FC, WL



$$\bar{P}(\bar{A}_{40}) = \frac{\bar{A}_{40}}{\bar{a}_{40}}$$

$$\bar{P}(\bar{A}_{40}) = \frac{0.3233}{13.87} = 0.02331$$

$$\bar{A}_{50} = \frac{\bar{a}_{50}}{50} = \frac{18.71}{50} = 0.3742$$

$$\begin{aligned} {}_{10}\bar{V}(\bar{A}_{40}) &= 0.3742 - 0.02331(12.83) \\ &= 0.0751 \quad \text{(A)} \end{aligned}$$

$$\bar{a}_{50} = \frac{1-\bar{A}_{50}}{\delta} = \frac{1-0.3742}{0.04879} = 12.83$$

$$\bar{A}_{40} = \frac{\bar{a}_{60}}{60} = \frac{19.40}{60} = 0.3233$$

$$\bar{a}_{40} = \frac{1-\bar{A}_{40}}{\delta} = \frac{1-0.3233}{0.04879} = 13.87$$