

40회

5. (1) 연납평준순보험료

$$P = ?$$

$$P\ddot{a}_{50:\overline{10}|} = {}_{10}E_{50}\ddot{a}_{60} + \ddot{a}_{45} - \ddot{a}_{50:45}$$

$$\begin{aligned}\ddot{a}_{50:\overline{10}|} &= \ddot{a}_{50} - {}_{10}E_{50}\ddot{a}_{60} \\ &= 13.3 - 0.51 \times 11.1 = 7.639\end{aligned}$$

$$P = \frac{0.51 \times 11.1 + 14.1 - 12.5}{7.639} \approx 0.951$$

(2-1) 5보험년도 50생존, 45사망

$${}_5V = {}_5E_{55}\ddot{a}_{60} - P\ddot{a}_{55:\overline{5}|}$$

$$\begin{aligned}\ddot{a}_{55:\overline{5}|} &= \ddot{a}_{55} - {}_5E_{55}\ddot{a}_{60} \\ &= 12.3 - 0.708 \times 11.1 \approx 4.441\end{aligned}$$

$${}_5V = 0.708 \times 11.1 - 0.951 \times 4.441 \approx 3.635$$

(2-2) 15보험년도

$$\begin{aligned}{}_{15}V &= a_{\overline{65:60}|} = \ddot{a}_{65} + \ddot{a}_{60} - \ddot{a}_{65:60} \\ &= 9.9 + 11.1 - 6.2 = 14.8\end{aligned}$$

6. 전기 연납평준 순보험료

$$v = \frac{1}{1.04} \approx 0.962, v^2 \approx 0.925$$

$$A_{60:\overline{2}|} = P\ddot{a}_{60:\overline{2}|}$$

$$\ell_{61} = 1 - q_{60}^{(1)} - q_{60}^{(2)} = 0.78$$

$$A_{60:\overline{2}|} = (1000q_{60}^{(1)} + {}_1Vq_{60}^{(2)})v + 1000\ell_{61}q_{61}^{(1)}v^2$$

$$\begin{aligned}{}_1V &= \ell_{61}(1000q_{61}^{(1)}v - P) \\ &= 0.78(1000 \times 0.03 \times 0.962 - P) \text{ a.j} \quad = 22.511 - 0.78P\end{aligned}$$

$$\begin{aligned}\ddot{a}_{60:\overline{2}|} &= 1 + (1 - q_{60}^{(1)} - q_{60}^{(2)})v \\ &= 1 + 0.78 \times 0.962 = 1.75\end{aligned}$$

$$A_{60:\overline{2}|} = (20 + 0.2(22.511 - 0.78P) \times 0.962 + 1000 \times 0.78 \times 0.03 \times 0.925$$

$$\begin{aligned}A_{60:\overline{2}|} &= (20 + 0.2(22.511 - 0.78P) \times 0.962 + 21.645 \\ &= 45.216 - 0.15P\end{aligned}$$

$$50.692 = 1.75P + 0.15P = 1.9P$$

$$P = \frac{45.216}{1.9} = 23.798$$