

Question # 40

Answer: D

Use Mod to designate values unique to this insured.

$$\ddot{a}_{60} = (1 - A_{60}) / d = (1 - 0.36933) / [(0.06) / (1.06)] = 11.1418$$

$$1000P_{60} = 1000A_{60} / \ddot{a}_{60} = 1000(0.36933 / 11.1418) = 33.15$$

$$A_{60}^{Mod} = v(q_{60}^{Mod} + p_{60}^{Mod} A_{61}^{Mod}) = \frac{1}{1.06} [0.1376 + (0.8624)(0.383)] = 0.44141$$

$$\ddot{a}^{Mod} = (1 - A_{60}^{Mod}) / d = (1 - 0.44141) / [0.06 / 1.06] = 9.8684$$

$$\begin{aligned} E[{}_0L^{Mod}] &= 1000(A_{60}^{Mod} - P_{60}\ddot{a}_{60}^{Mod}) \\ &= 1000[0.44141 - 0.03315(9.8684)] \\ &= 114.27 \end{aligned}$$