

Tests 8 and 9 Solutions:

$$1) \quad {}_{20}V = 1000 A_{60} - 11 \ddot{a}_{60} = 246.5306$$

$$2) \quad \begin{array}{c|c} {}_2L & Pr \\ \hline 300000v - 700 & q_{32} = .02 \\ -700 & P_{32} = .98 \end{array} \quad v = .95$$

$$E[{}_2L] = 284300 q_{32} - 700 P_{32} = \cancel{215.5} 5000$$

$$E[({}_2L)^2] = 284300^2 \cdot q_{32} + (-700)^2 P_{32} = \cancel{131897200} 1617010000$$

$$\Rightarrow \sqrt{\text{Var}({}_2L)} = \sqrt{\frac{1592010000}{\cancel{318477528}}} = \frac{39900}{\cancel{1710.85856}}$$

$$3) \quad {}_{20}L = 1000 Z_{50} - 6.6 \ddot{Y}_{50} \quad \ddot{Y}_{50} = \frac{1 - Z_{50}}{d}$$

$$= \left(1000 + \frac{6.6}{d}\right) Z_{50} - \frac{6.6}{d}$$

$$\Rightarrow \text{Var}({}_{20}L) = \left(1000 + \frac{6.6}{.06} (1.06)\right)^2 \left[{}^2A_{50} - (A_{50})^2 \right]$$

$$= 40812.72742$$

$$4) \quad {}_{10}V = 9000 \left(1 - \frac{\bar{a}_{40}}{\bar{a}_{30}}\right) \quad \bar{a}_{40} = \frac{1 - \bar{A}_{40}}{s} = \frac{0.56}{s}$$

$$\bar{a}_{30} = \frac{1 - \bar{A}_{30}}{s} = \frac{0.60}{s}$$

$$\therefore {}_{10}V = 9000 \left(1 - \frac{0.56}{0.60}\right) = 600$$

$$5) {}_{10}L = 90 \bar{Z}_{x+10} - \pi \bar{Y}_{x+10} \quad \bar{Y}_{x+10} = \frac{1 - \bar{Z}_{x+10}}{\delta}$$

$$\therefore {}_{10}L = \left(90 + \frac{\pi}{\delta}\right) \bar{Z}_{x+10} - \frac{\pi}{\delta}$$

$$\text{Var}({}_{10}L) = \left(90 + \frac{\pi}{\delta}\right)^2 \left[{}^2\bar{A}_{x+10} - (\bar{A}_{x+10})^2 \right]$$

$$\pi = \frac{90 \bar{A}_x}{\bar{a}_x} = \frac{90 \bar{A}_x \cdot \delta}{1 - \bar{A}_x} \Rightarrow \frac{\pi}{\delta} = \frac{90 \bar{A}_x}{1 - \bar{A}_x} = 10$$

$$\therefore \text{Var}({}_{10}L) = 100^2 [0.05 - (0.15)^2] = 275$$

$$6) {}_{10}V = 20000 \cdot {}_{10} \ddot{a}_{50}$$

$$= 20000 \cdot {}_{10}E_{50} \ddot{a}_{60} = 113863.6355$$

$$7) {}_8V = \left(1000 v q_{38} + 1000 v^2 p_{38}\right) - \left(80 + 80 v p_{38}\right)$$

$$= 751.13435$$

$$8) {}_{10}V = 5000 \left(1 - \frac{\bar{a}_{45:10|}}{\bar{a}_{35:20|}}\right)$$

$$\bar{a}_{45:10|} = \bar{a}_{45} - {}_{10}E_{45} \bar{a}_{55}$$

$$\bar{a}_{35:20|} = \bar{a}_{35} - {}_{20}E_{35} \bar{a}_{55}$$

$$\bar{a}_{35} \stackrel{VDD}{\propto} \alpha(\infty) \ddot{a}_{35} - \beta(\infty) = 14.8870 \dots$$

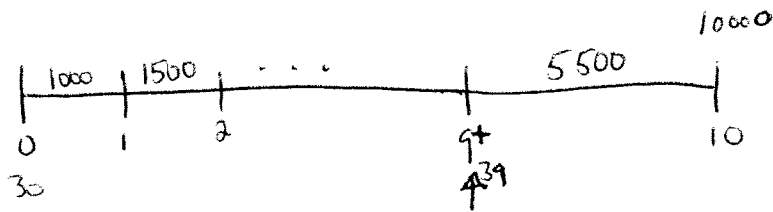
$$\bar{a}_{45} = \alpha(\infty) \ddot{a}_{45} - \beta(\infty) = 13.6062 \dots$$

$$\bar{a}_{55} = \alpha(\infty) \ddot{a}_{55} - \beta(\infty) = 11.7693 \dots$$

$$\therefore {}_{10}V = \cancel{5806.17} 1784.405$$

$$9) \quad \underline{V}_{\text{retno}} = \frac{305.92 - 7500(v_{\cdot 11})^9}{v P_{50}} = 296.929$$

10)



$$q+V = 5500 v q_{39} + 10000 v P_{39} = \frac{9422.92}{\cancel{9422.92}}$$