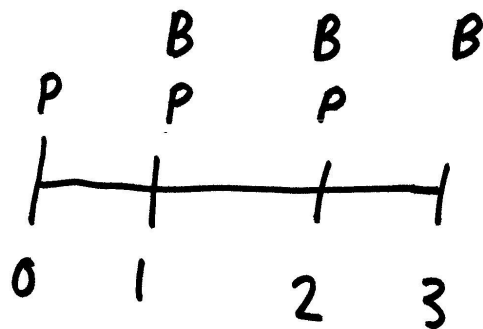


Solution #202

x	$l_x^{(T)}$	$d_x^{(1)}$	$d_x^{(2)}$
40	2000	20	60
41	A	30	50
42	D	40	

$$A = 2000 - 20 - 60 = 1920$$

$$D = 1920 - 30 - 50 = 1840$$



$$\ddot{a}_{40:\overline{3}|} = 1 + P_{40}v + 2P_{40}v^2$$

$$\ddot{a}_{40:\overline{3}|} = \frac{2000}{2000} + \frac{1920v}{2000} + \frac{1840v^2}{2000} \approx 2.7488$$

$$A_{40:\overline{3}|} = {}^{(1)}q_{40}v + 1.1{}^{(1)}q_{40}v^2 + 2.1{}^{(1)}q_{40}v^3$$

$$E[PV_{\text{ben}}] = 1000 \left[\frac{20}{2000}v + \frac{30}{2000}v^2 + \frac{40}{2000}v^3 \right] \approx 40.406$$

$$2.7488P = 40.406$$

$$P \approx 14.6998 \approx 14.7$$

B