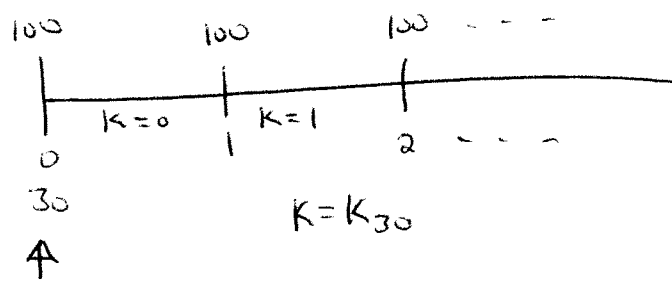


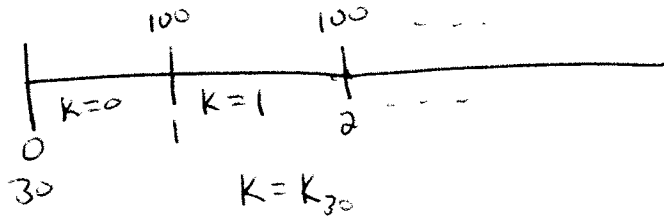
1) (See Video Solution)



$$PVRV = Y = 100 \ddot{a}_{\overline{K+1}|.06}$$

$$P = P_r(Y \geq 800) = {}_{10}P_{30} \stackrel{ILT}{=} .98019$$

2) (See Video Solution)

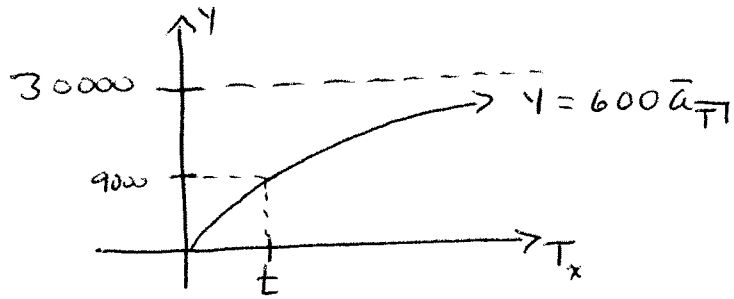


Σ = sum of payments

$$P = P_r(\Sigma \geq 800) = {}_8P_{30} \frac{DML(100)}{70} = \frac{62}{70} = \frac{31}{35}$$

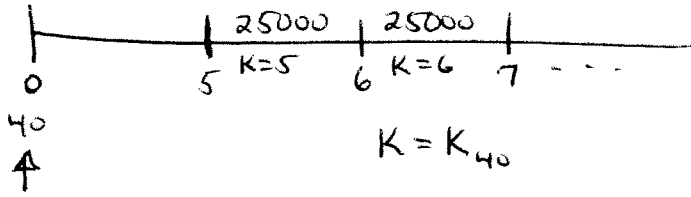
3) (See Video Solution)

$$PVRV = Y = 600 \bar{a}_{\overline{T}|}$$



$$P = \Pr(Y < 9000) = {}_t q_x = .51$$

4)



$$PVRV = Z = 25000 \cdot {}_{51}Z_{40}$$

$$P = Pr(Z < 10000)$$

Draw Table

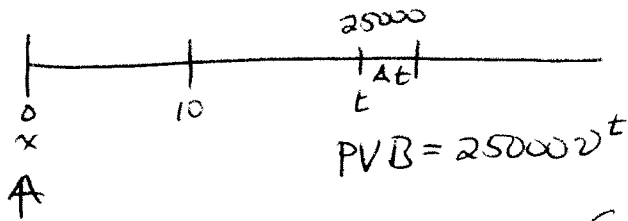
K	$Z = 25000 \cdot {}_{51}Z_{40}$
< 5	0
5	$25000 \cdot v_{.05}^6 = 18655$
6	$25000 \cdot v_{.05}^7 = 17767$
	$25000 \cdot v_{.05}^{K+1} = 10000 \Rightarrow K = 17+$

∴

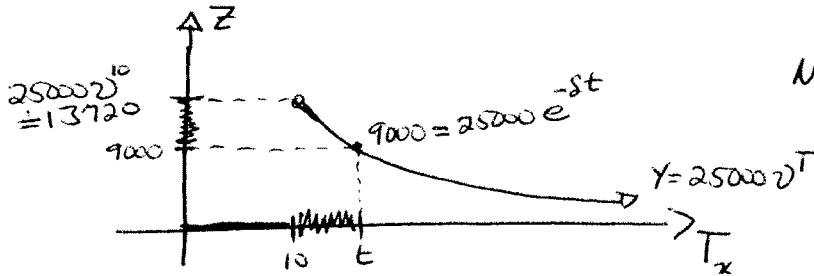
K	Z	Pr
< 5	0	$5p_{40}$
6	> 10000	
7	> 10000	
⋮		
17	> 10000	
18	< 10000	$\downarrow Pr = Pr(K \geq 18) = 18p_{40}$

$$\therefore P = Pr(Z < 10000) = 5p_{40} + 18p_{40} \cdot \frac{DML(80)}{40} = \frac{5}{40} + \frac{22}{40} = .675$$

5)



$$PVRV = Z = 25000 \cdot {}_{10|}\bar{Z}_x = \begin{cases} 0 & \text{if } T \leq 10 \\ 25000v^T & \text{if } T > 10 \end{cases}$$



Note: $\delta = .06 \Rightarrow 25000v^{10} = 25000e^{-10\delta} = 13720$

$$e^{-st} = \frac{9000}{25000} = .36$$

$$Pr(Z > 9000) = Pr(10 < T_x < t)$$

$$= {}_{10}P_x - {}_tP_x$$

$$= e^{-10\mu} - e^{-t\mu}$$

$$= e^{-10\mu} - (e^{-st})^{1/\delta}$$

$$= e^{-10(.03)} - (.36)^{.03/.06}$$

$$= e^{-.3} - .6 = .14082$$

b) (See Video Solution)

$$PVRV = Y = 100 \bar{Y}_x = \begin{cases} 0 & \text{if } T \leq 10 \\ 100(\bar{a}_{\overline{T}|} - \bar{a}_{\overline{10}|}) & \text{if } T > 10 \end{cases} \quad T = T_x$$

$$Pr(Y > 750) = .31434$$

7) (See Video Solution)

$$PVRV = Y = 100 \cdot {}_{51}\ddot{Y}_{35} = \begin{cases} 0 & \text{if } K < 5 \\ 100(\ddot{a}_{K+1} - \ddot{a}_{51}) & \text{if } K \geq 5 \end{cases} \quad K = K_{35}$$

$$\Pr(Y < 900) = {}_{24}q_{35} = .11973$$