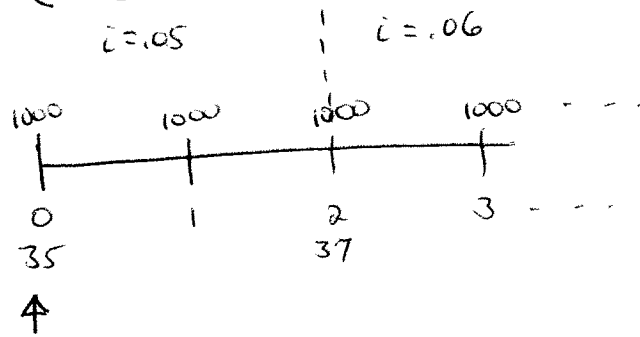
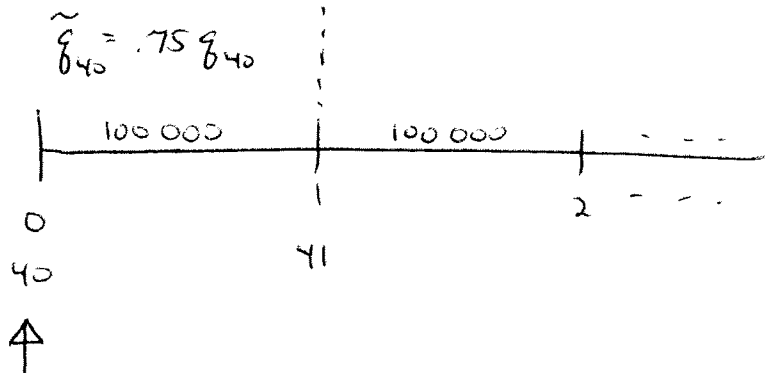


i) (See Video Solution)



$$EPV = 1000 \ddot{a}_{35} = 15659.11$$

2)



$$APV = 100000 A_{40} = 100000 (v \tilde{g}_{40} + v \tilde{P}_{40} \cdot A_{41})$$

$$v = \frac{1}{1.06}$$

$$\tilde{g}_{40} = .75 g_{40} = .75 (.00278) = .002085$$

$$\tilde{P}_{40} = 1 - \tilde{g}_{40} = .997915$$

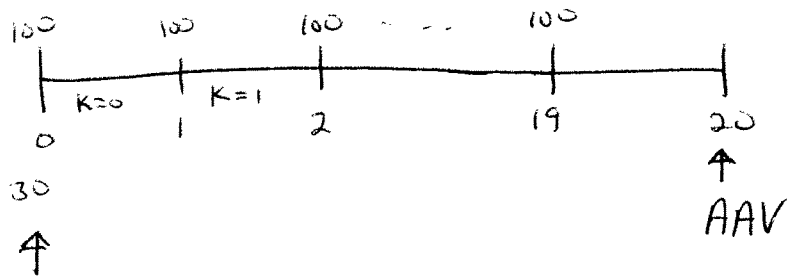
$$A_{41} = .16869$$

$$\therefore APV = 16077.67$$

3) (See Video Solution)

$$\text{Var}(1000 Z_{x+1}) = 1000^2 [{}^2A_{x+1} - (A_{x+1})^2] = 38245.84$$

4)



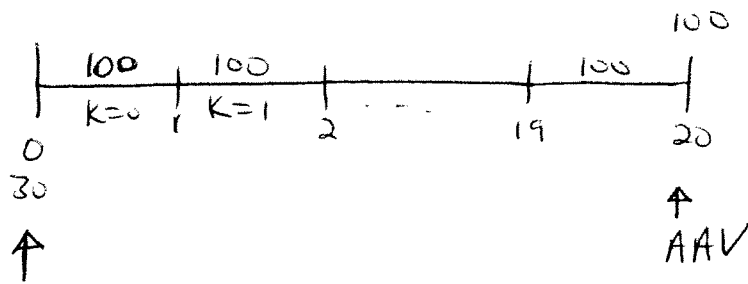
$$APV = 100 \ddot{a}_{30:\overline{20}|}$$

$$AAV = 100 \ddot{s}_{30:\overline{20}|} = \frac{100 \ddot{a}_{30:\overline{20}|}}{{}_{20}E_{30}}$$

$$\ddot{a}_{30:\overline{20}|} = \ddot{a}_{30} - {}_{20}E_{30} \cdot \ddot{a}_{50} \stackrel{ILT}{=} 15.8561 - 0.29374(13.2668)$$

$$\therefore AAV = 4071.33$$

5) (See Video Solution)



$$APV = 100 A_{30:20}$$

$$AAV = \frac{100 A_{30:20}}{20 E_{30}} \stackrel{ILT}{=} 109.98$$