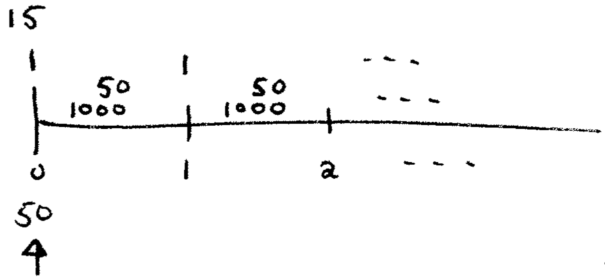
1/Test9) B&E



$$EPV(B\&E) = 15 + \ddot{a}_{50} + 1050\,A_{50} \overset{ILT}{=} 289.7693$$

$$EPV(P) = \pi^g \cdot \ddot{a}_{50} = 13.2668 \cdot \pi^g$$

(a) $\therefore \pi^g = \dfrac{289.7693}{13.2668} = 21.84$

$$\pi^{\wedge} = \frac{1000A_{50}}{\ddot{a}_{50}} = 18.77$$

(b) $\therefore \pi^e = \pi^g - \pi^{\wedge} = 3.07$

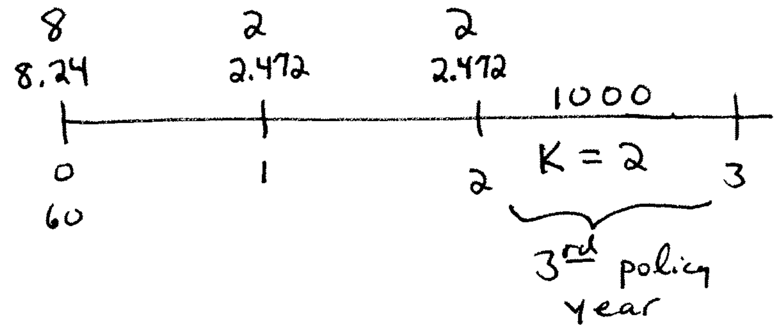
2/Test 9)

$$\pi = 41.20$$

$$.2\pi = 8.24$$

$$.06\pi = 2.472$$

B & E:



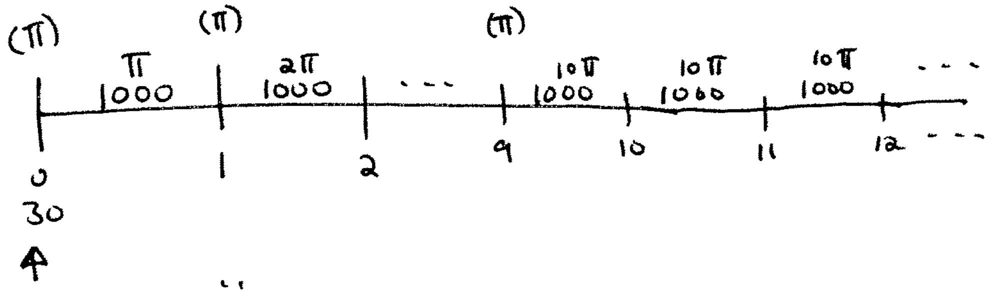
$$({}_0L \mid K=2) = [PV(B \,\&\, E \mid K=2)] - (PV(P \mid K=2))$$

$$= [1000v^3 + 16.24 + 4.472v + 4.472v^2]$$

$$-(41.20 + 41.20v + 41.20v^2)$$

$$\therefore ({}_0L \mid K=2) \overset{v=\frac{1}{1.05}}{=\!=} 770.59$$

3/Test 9)



$$EPV(P) = \pi \cdot \ddot{a}_{30:\overline{10|}}$$

$$EPV(B) = 1000 A_{30} + \pi \cdot (IA)^{\;1}_{30:\overline{10|}} + 10\pi \cdot {}_{10|}A_{30}$$

$$\therefore \quad \pi = \frac{1000 A_{30}}{\ddot{a}_{30:\overline{10|}} - (IA)^{\;1}_{30:\overline{10|}} - 10 \cdot {}_{10|}A_{30}} = 15.02$$

$$S = \sum_{1}^{10000} ({}_0L):$$

4/Test9) ? π such that $Pr(S > 0) = .01$

$$Pr(S>0) = Pr\left(SND > \frac{0 - E[S]}{\sqrt{Var(S)}}\right) = .01$$

$$\Rightarrow \frac{-E[S]}{\sqrt{Var(S)}} = 2.326 \Rightarrow -E[S] = 2.326\sqrt{Var(S)}$$

$$E[S] = 10000 \cdot E[{}_0L]$$

$$Var(S) = 10000 \cdot Var({}_0L)$$

$${}_0L = 100000 Z_{60} - \pi \ddot{Y}_{60} \Rightarrow E[{}_0L] = 100000 A_{60} - \pi \cdot \ddot{a}_{60}$$

$$\Rightarrow E[{}_0L] \overset{ILT}{=} 36913 - 11.1454\pi$$

For Variance

$${}_0L = 100000 Z_{60} - \pi\left(\frac{1 - Z_{60}}{d}\right) = \left(100000 + \frac{\pi}{d}\right) Z_{60} - \frac{\pi}{d}$$

$$\Rightarrow Var({}_0L) = \left(100000 + \frac{\pi}{d}\right)^2 \left[{}^2A_{60} - (A_{60})^2\right]$$

$$\therefore -E[S] = -10000(36913 - 11.1454\pi) = 10000(11.1454\pi - 36913)$$

$$\sqrt{Var(S)} = \sqrt{10000} \cdot \sqrt{Var({}_0L)} = 100 \cdot \left(100000 + \frac{\pi}{d}\right) \cdot \sqrt{{}^2A_{60} - (A_{60})^2}$$

$$\therefore -E[S] = 2.326\sqrt{Var(S)}$$

$$\Rightarrow 10000(11.1454\pi - 36913) \overset{ILT}{=} 2.326 \cdot 100 \cdot \left(100000 + \frac{\pi}{d}\right) \cdot \sqrt{.0411\ldots}$$

$$\xRightarrow{d = \frac{.06}{1.06}} \pi = 3379.56$$