

22V3

1.  $N = 100$

$i = 4$

$x = 5$

a)  $r = 6\%$

$$V(0) = 5 \sum_{t=1}^4 e^{-ir} + 100 e^{-4r}$$

$= 89.055$  ✓

per  $r \rightarrow$

b)  $r = 5\%$

$V(0) = 89.55$  ✓



$$V(2) = 99.55$$

✓

1)  $N = 1000$   
 $r = 2$   
 $T = 3$

$$100 = 8 \sum_{t=1}^3 e^{-rt} + 100 e^{-r \cdot 3} \Rightarrow r = 4.65\% \text{ (when)}$$

$N = 1000$   
 $r = 10$   
 $T = 10$  (PMT 600)

a)  $r = 4\% \text{ 600}$

$$V(20) = \frac{1000}{\left(1 + \frac{0.04}{2}\right)^{20}} + 18 \sum_{t=1}^{20} \frac{1}{\left(1 + \frac{0.04}{2}\right)^{2t}}$$

$$V(20) = 0(0, 20) = 964.074$$

✓



$$1100 - \frac{1000}{1.05} \cdot \frac{1}{e^{\frac{1}{1.05}}} + 1000 \cdot \frac{1}{e^{\frac{1}{1.05}}} \Rightarrow r = 2.83\%$$

$$\text{TRAI. PERIODS} = \frac{25}{1100} = 2.27\% \text{ EWG.}$$

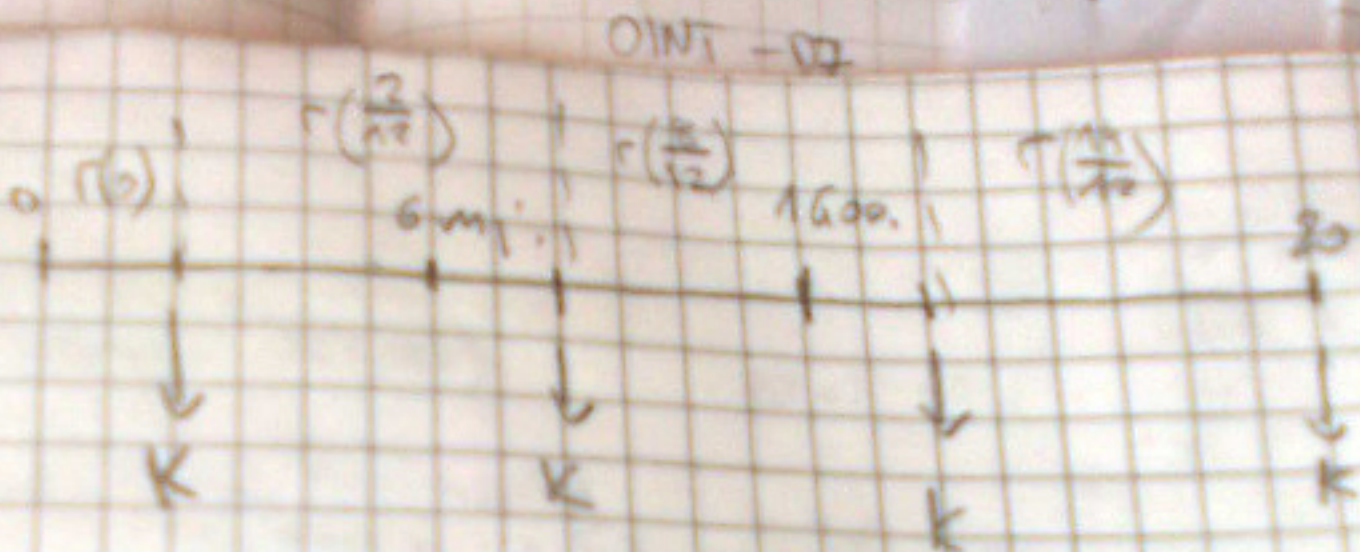
$$= \underline{4.34\% \text{ G.}}$$

$$\text{TRAI. PERIODS} > \text{PERIODS OF INT.} \Rightarrow B > 100\%$$



5.  $T = 20 \text{ yr.}$   
 $N = 100$   
 YOP.  $r = 6\%$  ~~2000~~

$$r(t) = 0.5254 \frac{\ln(1+2t)}{200}$$



$L = 3$  (P.W. 6000!)

~~$$V_0 = \frac{6000}{1.06} + \frac{6000}{1.06^2} + \frac{6000}{1.06^3} + \frac{6000}{1.06^4} + \frac{6000}{1.06^5} + \frac{6000}{1.06^6} + \frac{6000}{1.06^7} + \frac{6000}{1.06^8} + \frac{6000}{1.06^9} + \frac{6000}{1.06^{10}} + \frac{6000}{1.06^{11}} + \frac{6000}{1.06^{12}} + \frac{6000}{1.06^{13}} + \frac{6000}{1.06^{14}} + \frac{6000}{1.06^{15}} + \frac{6000}{1.06^{16}} + \frac{6000}{1.06^{17}} + \frac{6000}{1.06^{18}} + \frac{6000}{1.06^{19}} + \frac{6000}{1.06^{20}}$$~~

$$r_1 = r(0) = 5.25\%$$

$$r_2 = r\left(\frac{2}{12}\right) = 5.39\%$$

$$r_3 = r\left(\frac{8}{12}\right) = 5.67\%$$

$$r_4 = r\left(\frac{14}{12}\right) = 5.85\%$$

$$B(0,20) = 3e^{-r_1 \frac{2}{12}} + 3e^{-r_2 \frac{8}{12}} + 3e^{-r_3 \frac{14}{12}} + 103e^{-r_4}$$

$$= \underline{102.404}$$

$$V_0 = \frac{1}{1.06} + \frac{1}{1.06^2} + \frac{1}{1.06^3} + \frac{1}{1.06^4} + \frac{1}{1.06^5} + \frac{1}{1.06^6} + \frac{1}{1.06^7} + \frac{1}{1.06^8} + \frac{1}{1.06^9} + \frac{1}{1.06^{10}} + \frac{1}{1.06^{11}} + \frac{1}{1.06^{12}} + \frac{1}{1.06^{13}} + \frac{1}{1.06^{14}} + \frac{1}{1.06^{15}} + \frac{1}{1.06^{16}} + \frac{1}{1.06^{17}} + \frac{1}{1.06^{18}} + \frac{1}{1.06^{19}} + \frac{1}{1.06^{20}}$$