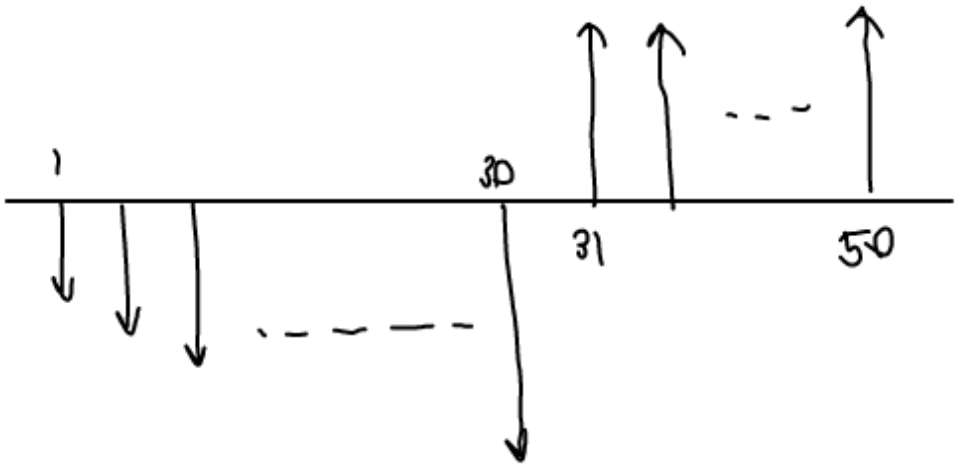
1.



$$i_r = \frac{(1+i_2)}{(1+5)} - 1$$

$$= \frac{1.08}{1.06} - 1$$

$$= 1.887\%$$

already been a year

$$\cancel{I}x(1.01887)(P/A, 0.01887, 0.05, 30) = \cancel{I}(P/A, 0.05, 20)(P/F, 0.05, 30)$$

$$x(1.01887)\frac{(P/A, 0.03055, 30)}{1.01887} = (P/A, 0.05, 20)(P/F, 0.05, 30)$$

$$x\frac{(1.03055)^{30}-1}{0.03055(1.03055)^{30}} = \frac{(1.05)^{20}-1}{0.05(1.05)^{20}}\frac{1}{(1.05)^{20}}$$

$$x = \frac{2.8835}{19.4618}$$

$$x = 0.1482$$

∴ He should deposit 14.82 %.

2. $CTF = 1 - \frac{td(1+i/2)}{(i+d)(1+i)}$ $\quad CSF = 1 - \frac{td}{(i+d)}$

$PW_{at} = -P*CTF + S*CSF(P/F, i, 25)$

3. $PW_P = -800 + 0.2(800)(P/F,0.2,15) - 80(P/A,0.2,15)$
$-15(A/P,0.2,5)(P/A,0.2,15) + (0.035-0.01)28(365)(P/A,0.2,15)$

$0 = -750 + 0.2(750)(P/F,0.2,15) - 70(P/A,0.2,15)$
$-12(A/P,0.2,5)(P/A,0.2,15) + (0.038-0.009)x(365)(P/A,0.2,15)$

$750 - 9.736 + 327.283 + 12(4.675)(0.2139) = 0.029x365(4.675)$

$x = 21.82$

$x = 22$ rooms

4. $i_c = (1+0.1)(1+0.06) - 1 = 0.166$

$PF = -7 * CTF + 0.9 * CSF(P/F,0.10,3) - (11+2(A/G,0.10,3))(P/A,i,3)(1-.06)$
$(1+(P/F,0.10,3)+(P/F,0.10,6)+(P/F,0.10,9)$

$CTF = 1 - \frac{0.4(0.2)(1+\frac{0.166}{2})}{(0.166+0.2)(1+0.166)} = 0.79698$

$CSF = 1 - \frac{0.4(0.2)}{(0.166+0.2)} = 0.78142$

$PW = -7(0.79689) + 0.9(0.78142)(0.7513) - (11+2(0.9366))(2.4869)(0.6)$

$= -24.2585(1 + 0.7513 + 0.5645 + 0.4241)$

$= -66,466$

$PW = -8 * CTF + 1 CSF(P/F,0.1,4) - 9(P/A,0.1,4)(1-t)$
$(1+(P/F,0.1,4)+(P/F,0.1,8))$

PW: $-12000((P/A, 0.1, 12))(1-t) = -49069.54$

5.2 c)

6. a) $EAC(n): 3800(A/P, 15\%, n) - 3800(0.8)^n(A/F, 15\%, n) + 1100 + 250(A/G, 15\%, n)$

$= 3800\left(\frac{0.15 \times 1.15^n}{1.15^n - 1}\right) - 3800(0.8)^n\left(\frac{0.15}{1.15^n - 1}\right) + 1100 + 250\left(\frac{1}{0.15} - \frac{n}{(1.15)^n - 1}\right)$

$EAC(1) = 2430$

$= 2422 \quad \therefore n = 2$

2430

b) $EAC(n): 900(A/P, 15\%, 1) - 300(A/F, 15\%, 1) + 1700$

$= 900\left(\frac{0.15 \times 1.15^1}{1.15^1 - 1}\right) - 300\left(\frac{0.15}{1.15^1 - 1}\right) + 1700$

$= 2435$

7. a) $PW_{III-II} = (390-300) + (140-120)(P/A, i, 25) - 10(P/A, i, 25)$

$0 = -90 + 10\frac{(1+i)^{25}-1}{i(1+i)^{25}}$

$PW(i=9) = 8.22$

$PW(i=10) = 0.77$

$\therefore IRR_{III-II} > MARR$

$\therefore$ choose III

6) I: $\frac{200}{20} = 10$

II: $\frac{300}{40} = \frac{15}{2}$ chose II

III: $\frac{390}{50} = \frac{39}{5}$

8. a) $0 = -12 + 3(P/A, i, 5) + 2(P/F, i, 5)$

$0 = -17 + 4(P/A, i, 5) + 3(P/F, i, 5)$

b) challenge B with A according to Sorrusta

9. a) $i_{AA} = i_{BA}(1-t)$ $\therefore i_{AA} < i_{BA}$

b) $i_{AR} = \frac{(1+i_{AA})}{1+5} - 1$

$i_{AA} = (i_{AR} + 1)(1+5) - 1$

$i_{AA} > i_{AR}$

10. $EAC(n) = 10000(A/P, 15\%, n) - 10000(0.75)^n(A/F, 15\%, n)$
$+ 5000(P/A, 15\%, 15\%, n)(A/P, 15\%, n)$

$= 10000 \frac{0.15(1.15)^n}{(1.15)^n - 1} - 10000(0.75)^n \frac{0.15}{1.15^n - 1}$

$+ 5000n/1.15 \frac{0.15(1.15)^n}{(1.15)^n - 1}$

$= 9000$ when $n=1$

12. $i = (1+0.09)(1+0.05) - 1$

$= 14.45\%$

$CTF = 1 - \frac{0.4(0.35)(1+0.07075)}{(0.1445+0.35)(1.1445)} = 0.735$ $CSF = \frac{1 - 0.4(0.35)}{0.1445 + 0.35}$

$= 0.7169$

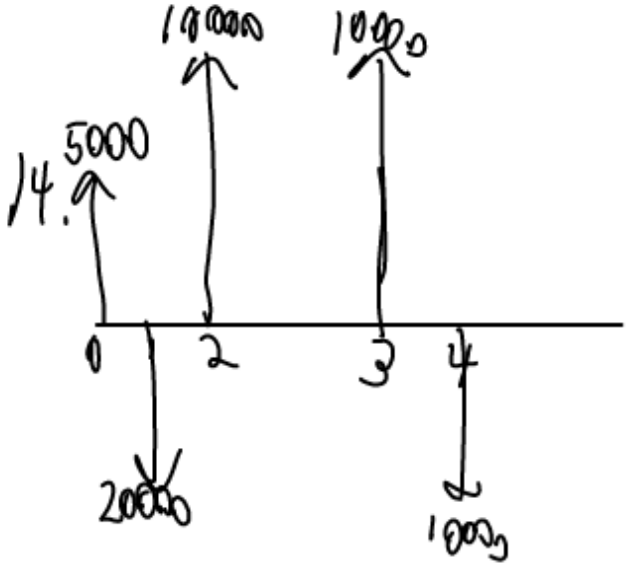
$PW = (17000 - 12000)(CTF) + 1000(P/F, 0.09, 4) + 3000(P/A, 9, 4)(1-0.4)$

CSF

$= 7000(0.7348) - \frac{1000(0.7169)}{(1.09)^4} + 3000(0.6)\frac{(1.09)^4 - 1}{0.09(1.09)^4}$

$= 11976.76$ ~0

choose A



13. a) all

b) reject none

challenge 2-1

2 wins

challenge 3-2

3 bases

choose 2

14. $5000(F/P, 20\%, 4) + 10000(F/P, 20\%, 2) + 10000(F/P, 20\%, 1)$

$= 20000(F/P, i, 3) + 10000$

$5000(1.2)^4 + 10000(1.2)^2 + 10000(1.2) - 10000 = 20000(1+i)^3$

$1.3384 = (1+i)^3$

$1.102 = 1+i$

$i = 10.203\%$ CMARR

bad