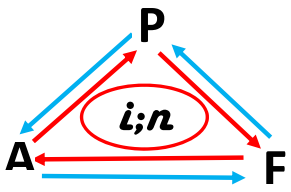
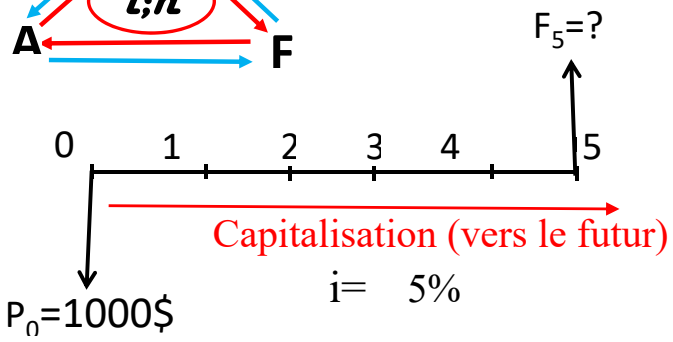
Exemples pour intérêts



1. (F/P;i%,n)

Valeur future d'un placement ?

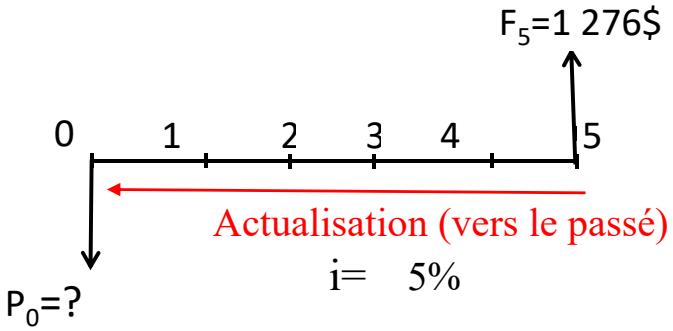


$F_5 = 1000(1+i)^5 =$ **1000** x **1.27628** = **1 276 $**

(F/P;5%;5)

2. (P/F;i%;n)

On veut accumuler 1 276$

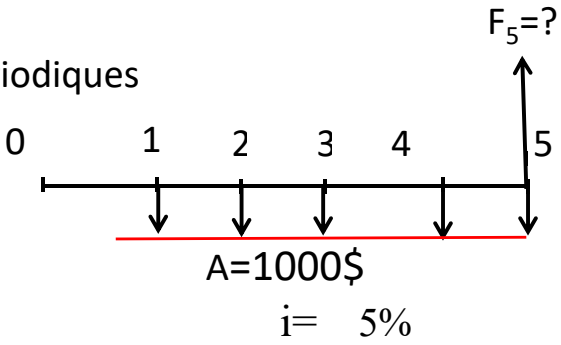


$P_0 = 1000(1+i)^{-5} =$ **1000** x **0.78353** = **784 $**

(P/F;5%;5)

3. (F/A;i%;n)

Montant accumulé par des dépôts périodiques égaux ?

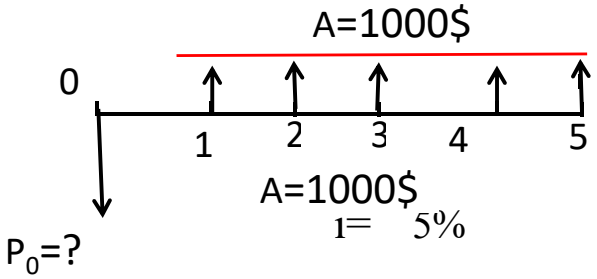


$F_5 = 1000\ [(1+i)^5-1]/i =$ 1000 x 5.5256 = **5 526 $**

(F/A;5%;5)

4. (P/A;i%;n)

Valeur future d'un placement ?

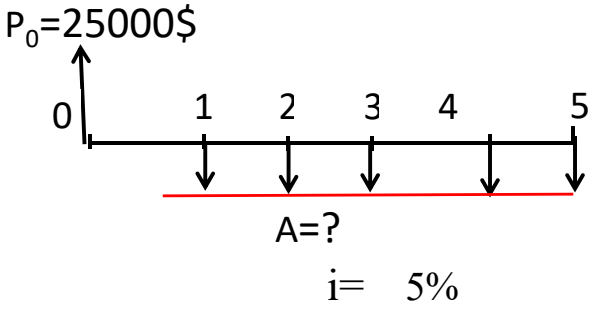


$P_0 = 1000\ [(1+i)^5-1]/[i(1+i)^5]=$ **1000** x **4.3295** = **4 329 $**

(P/A;5%;5)

5. (A/P;i%;n)

Versements périodiques pour rembourser une dette?

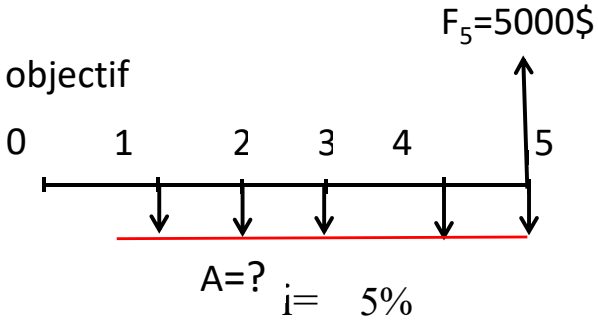


$A = 25000\ [i(1+i)5]/[(1+i)^5-1]=$ **25000** x **0.23097** = **5 774 $**

(A/P;5%;5)

6. (A/F;i%;n)

Épargne périodique pour atteindre un objectif futur (ex RÉER)?

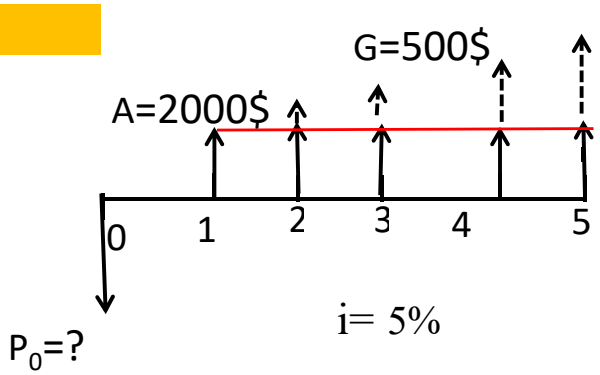


$A = 5000\ [i/[(1+i)^5-1]]=$ **5000** x **0.18097** = **905 $**

(A/F;5%;5)

7. (P/A;i%;n) et (P/G;i%,n)

Montant disponible pour répondre à des versements périodiques de 2000$ augmentant chaque période de 500$

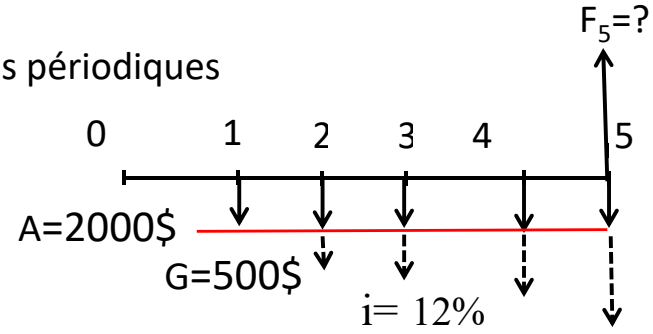


$P_0 = 2000\ [(1+i)^5-1]/[i(1+i)^5] + 500[(1/i)\{(1+i)^5-1)/(i(1+i)^5) - n/(1+i)^5\}]$

=	2 000	x	4.3295 (P/A;5%;5)	+	500	x	8.2369 (P/G;5%;5)
=			8 659 $	+			4 118 $
P_0=			**12 777 $**				

8. (F/A;5%,5) et (F/G;5%,5)

Montant accumulé par des dépôts périodiques égaux ?



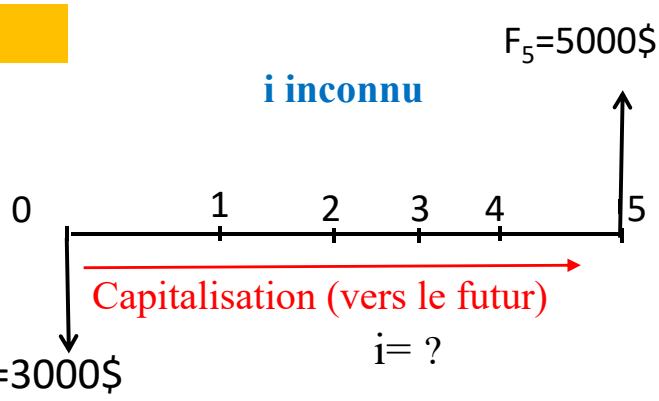
$F_5 = 2000\ [(1+i)^5-1]/i + 500(F/G;i;n)$

2000	x	6.35285 (F/A;12%;5)	
500	x	11.27373 (F/G;12%;5)	F/G=(1/i)[(F/A)–n]
F_5 =		**18 343 $**	

9. (i/P;F,n)=$(F/P)^{(1/n)}$ - 1

i = (5000/3000)^(1/5)-1=

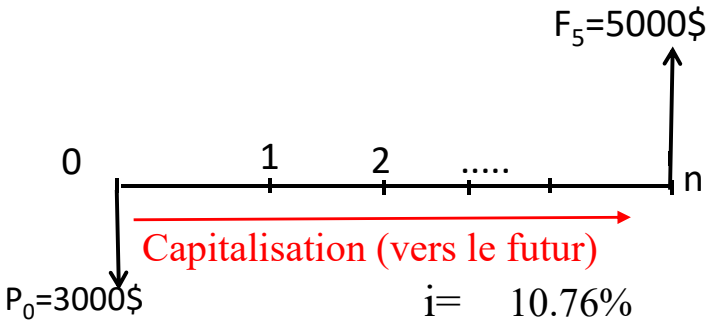
i inconnu



i = (5000/3000)^(1/5)-1= **10.76%**

10. (n/P;F,i)= n inconnu

$$n=\frac{\ln\left(\frac{F}{P}\right)}{\ln(1+i\%)}$$



3000(1+10.76%)^n =5000

n=ln(5000/3000)/ln(1+10.76%)= 5 ans

11. (i/A;F,n) interpolation i inconnu

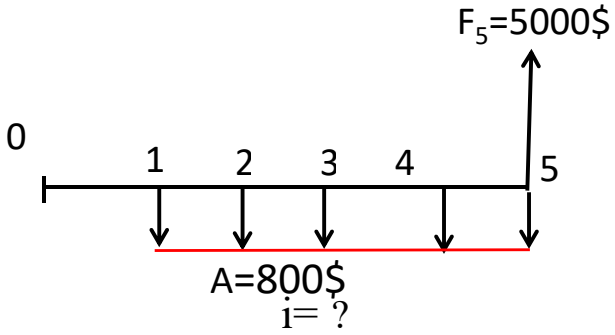
5000=800(F/A;i;5)

(F/A;i;5)=5000/800=6,25

(F/A;11%;5)=6,22780 table

(F/A;i;5)=6,25

(F/A;12%;5)=6,35285 table



(i-11%)/(12%-11%)= (6,25-6,22780)/(6,35285-6,22780)

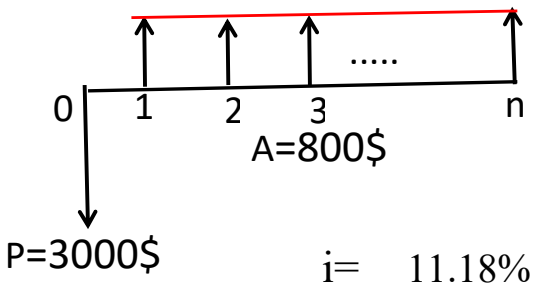
i= 11.18%

12. (n/P;A,i) n inconnu

$$n=\frac{\ln\left(\frac{A}{A-Pi}\right)}{\ln(1+i)}$$

$$n=\frac{\ln\left(\frac{800}{800-3000*0.1118}\right)}{\ln(1+0.1118)}=$$

= 5 ans

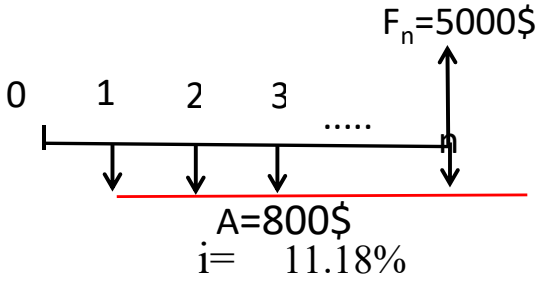


13. (n/F;A,i) n inconnu

$$n=\frac{\ln\left(1+\frac{F*i\%}{A}\right)}{\ln(1+i)}$$

$$n=\frac{\ln\left(1+\frac{5000*0.1118}{800}\right)}{\ln(1+0.1118)}$$

= 5 ans



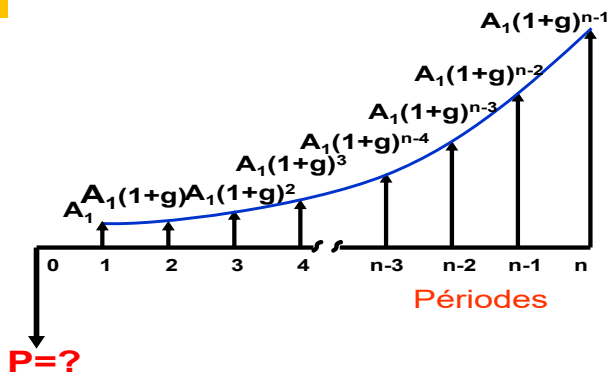
14. (P/A;g;i;n)

- Si $i \neq g$, alors

$$P = A_1 \left[\frac{1 - \left(\frac{1+g}{1+i} \right)^n}{i - g} \right] = A_1 (P / A_1 ; g ; i ; n)$$

- Si $i = g$, alors

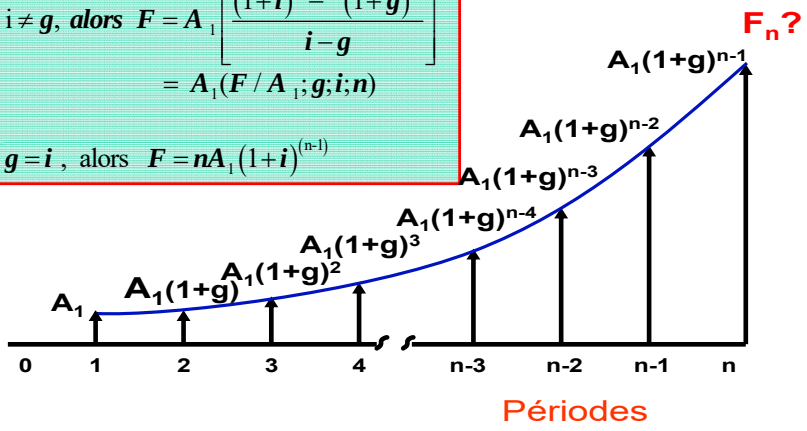
$$P = \frac{n A_1}{1+i}$$



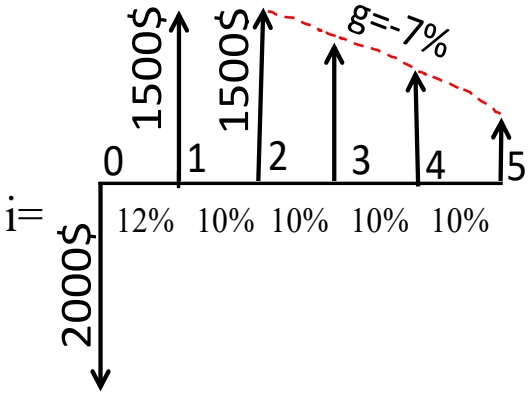
15. (F/A;g;i;n)

- Si $i \neq g$, alors $F = A_1 \left[\frac{(1+i)^n - (1+g)^n}{i - g} \right] = A_1 (F / A_1 ; g ; i ; n)$

- Si $g = i$, alors $F = n A_1 (1+i)^{(n-1)}$



Exemple



Valeur actuelle VA=-2000+1500(P/F;12%;1)+1500(P/A_1;-7%;10%;4)*(P/F;12%;1)

VA=-2000+1500(1.12^-1)+1500(1-((1-7%)/(1+10%))^4)/(10%-(-7%))*(1.12)^-1

= 3 192.26 $

F=(-2000(F/P;12%;1)+1500)(F/P;10%;4)+1500(F/A_1;-7%;10%;4)

F=(-2000(1.12) + 1500)$(1.1)^4$ + 1500($(1+10\%)^4$ - $(1-7\%)^4$)/(10% - (-7%))

= 5 234.64 $

5 234.64 $

F=3192.26*1.12*1.1^4

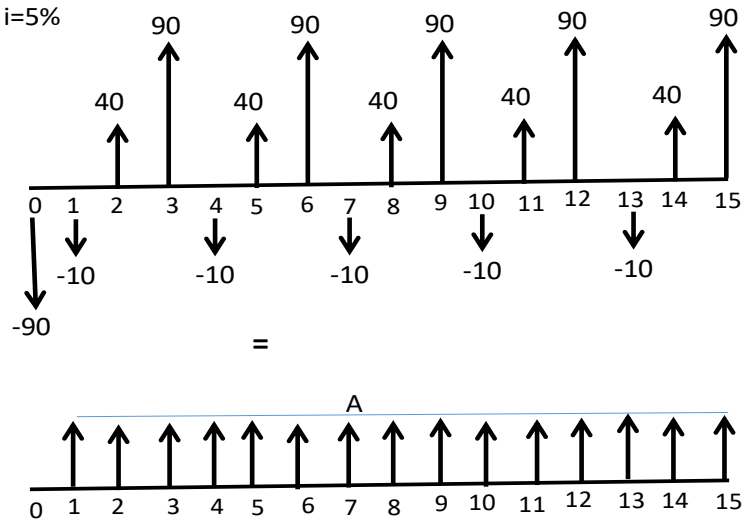
= 5 234.64 $

16 Flux cycliques jusqu'à l'infini

Trouver A d'un cycle

CI= P= A/i

A = Pi



3 = nb de gradient + 1

A= -90(A/P;5%;15) **-10+50(A/G;5%;3)** = -90 x 0.09634 -10+50 x 0.96749= **29,70$**

Si le cycle se produisait jusqu'à l'infini:

A= (-90 +(**-10+50(A/G;5%;3))/5%)*5%** = (-90 + (-10+50 x 0.96749)/5%)*5%= **33,87$**