# Compound Interest

If

Principal amount = P

Rate of Interest = R

Time = n years

Then

i.    Amount $A = P\left(1+\dfrac{R}{100}\right)n$

ii.    Compound Interest $CI = A-P = P\left[\left(1+\dfrac{R}{100}\right)n-1\right]$

- If Interest is compounded half-yearly then R=R/2 and n= 2n

  Then Amount $A= P\left(1+\dfrac{R}{200}\right)2n$

- If interest is compounded quarterly then R = R/4 and n=4n

  Then Amount $A= P\left(1+\dfrac{R}{400}\right)4n$

- If interest is compounded annually but time is in fraction (suppose $n\dfrac{a}{b}$ yr) then

  Amount $A = P\left(1+\dfrac{R}{100}\right)n\times\left(1+\dfrac{\frac{a}{b}R}{100}\right)$

- If Rate of Interest are $R_1$%, $R_1$%, $R_2$%, $R_3$% for 1st, 2nd and 3rd year respectively then

  Amount $A= P\left(1+\dfrac{R1}{100}\right)\left(1+\dfrac{R2}{100}\right)\left(1+\dfrac{R3}{100}\right)$