Formulae for calculation of interest, loan repayments and deposits

**Formula for calculation of compounded interest on deposit**

\[ D_n = D_0 \cdot (1+r)^n \]  
\[ D_n = D \cdot (1+r_1)(1+r_2)(1+r_3) \ldots (1+r_n) \]  

**Formula for calculation of loan repayments on self amortising loan**

\[ L/n + L \cdot r_1 \quad L/n + ((L-(L \cdot 1)/n) \cdot r_2 \quad L/n + ((L-(L \cdot 2)/n) \cdot r_3 \quad L/n + ((L-(L \cdot (q-1))/n) \cdot r_q \]

**Formula for calculation of compounded constant (fixed) rate interest on self amortising loan (equal repayments of principal)**

\[ L \cdot r + (L-L \cdot 1/n) \cdot r + (L-L \cdot 2/n) \cdot r + (L-L \cdot 3/n) \cdot r + \ldots + (L-L \cdot n/n) \cdot r \]

Total compounded interest payable over the life of the loan  = \( (L \cdot r \cdot (n+1))/2 \)

**Interest rate to be charged by an investor to achieve an expected rate of return on self amortising loan, all discounted**

\[ r = (1+R) \cdot n - (d_0+d_1+d_2+\ldots d_n) / [(n-0) \cdot d_0 + (n-1) \cdot d_1 + (n-2) \cdot d_2 + \ldots (n-n) \cdot d_n] \]