

# ENGINEERING ECONOMICS MADE EASY - FUNCTIONALITY

for the TiNspire CAS – [www.TiNspireApps.com](http://www.TiNspireApps.com)

## Financial Calculations

Future Value & Compound Interest  
Effective Interest Rate  
Nominal Interest Rate  
Compute Inflation Rate  
Investment Worth after Inflation  
Investment Worth after Inflation & Tax  
Depreciation : Straight Line Method  
Depreciation : Sum of Years Digits  
Depreciation : Reducing Balance Method  
Income Tax Calculation  
Compute any Rate [%] by Definition  
Present Value of Perpetuity  
Simple Interest  $I=P*r*t$   
Compounded Interest:  $A=P*(1+r)^t$   
Compounded Interest= $P*(1+r)^t-P$   
Compounded Continuously  $A=P*e^{(r*t)}$

## Cash Flow / Capital Investment

Geometric Gradient of Payments (P/A)  
Equal Payment: Present Worth (P/A)  
Equal Paym: Capital Recovery (A/P)  
Equal Paym: Sinking Fund (A/F)  
Equal Paym: Compound Amount (F/A)  
Arithmetic Gradient to Uniform Series (A/G)  
Arithmetic Gradient Present Worth (P/G)  
Single Payment Compounded: (F/P)  
Single Payment Present Worth: (P/F)  
Solve for V:  $A=B*v+C$   
Equivalent Annual Cost EAC  
Equivalent Annual Cost EAC + Cost  
 $V1+V2*(A/P)+V3*(A/F,i,n)+V4*(A/G,i,n)$   
 $V1+V2*(P/A)+V3*(P/G,i,n)+V4*(P/F,i,n)$

## Economical Calculations 1

Marginal Profit  
Marginal Revenue  
Break Even Point  $R=C$   
Demand Analysis  
Economic Order Qty

Continuous Income Stream  
Price Elasticity  
Find Equilibrium of Supply & Demand  
Consumer Surplus  
Producer Surplus  
Consumer & Production Surplus  
Real vs Nominal GDP

### **Economical Calculations 2**

Cobb-Douglas Prod.  
Gini Coefficient  
Differentials  
 $y=f(x)^x$   
Logistic Differential Equation  
Simplex Algorithm  
Average Tax Rate  
Marginal Tax Rate  
Price Index  
Real GDP - Expenditure Approach  
Real GDP - Income Approach  
GDP Deflator: Nominal GDP  $\rightarrow$  Real GDP  
Compute any Rate [%] : Labor  
Nominal & Real Interest Rate  
Unemployment Rate

### **Math Tools**

Solve any Equation  
Solve using the Rule 72  
Solve Money/Exponential Growth Problems  
Geometric Sequence & Series  
Sigma S-Notation