Simple interest

Interest = P x R x T

P: Principle, initial amount

R: Interest rate per year (decimal)

T: Time in year

1. Ken invested $ 50 000 in a bank account that paid 2.5 % annual simple interest for 10 years.

(a) Find the total amount of interest Ken would earn.

(b) Find Ken's investment after 10 years.

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2. John invested $ 2 300 in a bank account that paid 1.2 % annual

simple interest for 5 years.

(a) Find the total amount of interest John would earn.

(b) Find John's investment after 15years.

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Compound Interest

$$\text{Total} = P\left(1 + \frac{r}{n}\right)^{nt}$$

P: Principle, initial amount

r: Interest rate per year (decimal)

n: Number of times received interest per year

t: Time in year

GDC Skills

Casio

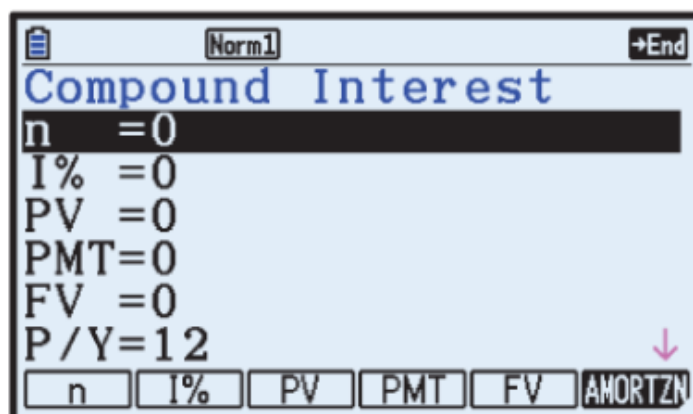Menu → A (TVM) → F2 (Compound interest)

n = number of compounding periods

I% = interest rate per year

PV = present value

FV = future value

PMT = number of payment per year

Casio fx-CG50

TI 84

APPS → 1:Finance → 1:TVM solver

n = number of compounding periods
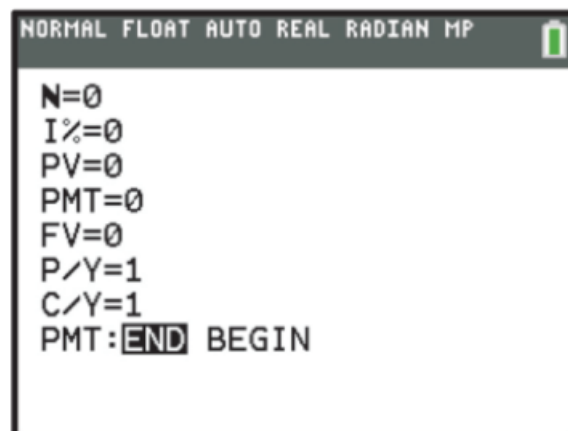
I% = interest rate per year

PV = present value

FV = future value

P/Y = numbers of payment per year

C/Y = number of compounding periods per year

T-nspire

Menu → 8:Finance → 1:Finance Solver
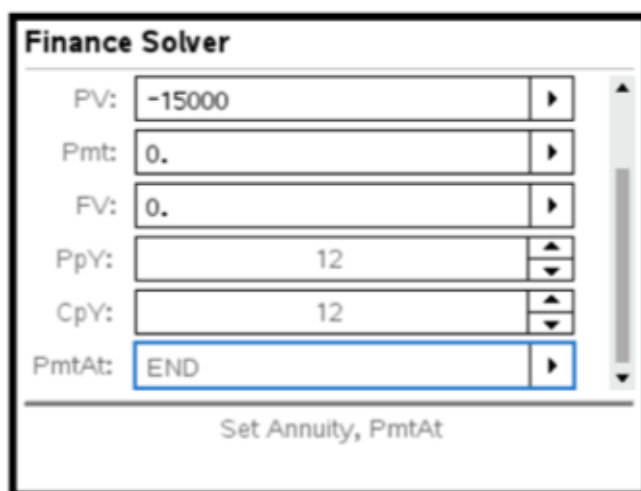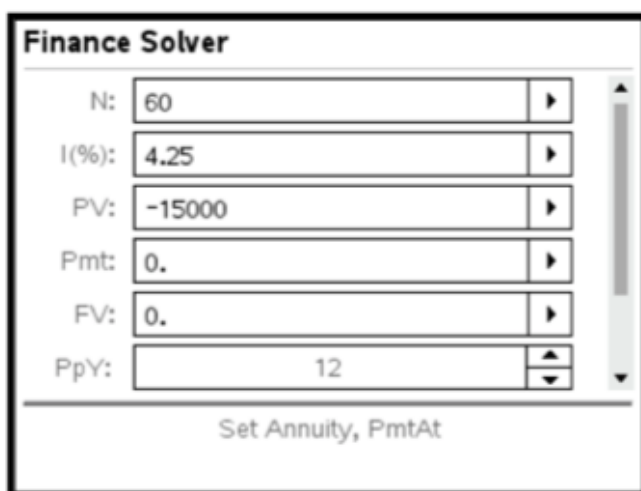
n = number of compounding periods

I% = interest rate per year

PV = present value

FV = future value

P/Y = numbers of payment per year

C/Y = number of compounding periods per year

1. Kelvin invests $3 000 in a bank that offers compound interest at a rate of 4.5% per annum, **compounded yearly**.

Find the total investment after 6 years.

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2. Amy invests $15 000 in a bank that offers compound interest at a rate of 2.0 % per annum, **compounded yearly**.

Find the total investment after 10 years.

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Exercise

1. Nick has $150 000 in a trust fund. Each year he donates 8 % of the money remaining in his trust fund to charity.

(a) Determine the maximum number of years Nick can donate to charity while keeping at least $50 000 in the trust fund.

Louise invests $200 000 in a bank account that pays a nominal interest rate of 5 % , **compounded quarterly**, for eight years.

(b) Calculate the value of Louise's investment at the end of this time. Give your answer correct to the nearest cent.

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2. Karl invests 1000 US dollars (USD) in an account that pays a nominal annual interest of 3.5 % , **compounded quarterly**. He leaves the money in the account for 5 years.

(a) (i) Calculate the amount of money he has in the account after 5 years;

(ii) Write down the amount of **interest** he earned after 5 years.

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3. Harinder has 14 000 US Dollars (USD) to invest for a period of five years in a fixed deposit account in an American bank.

The account pays a nomial annual interest rate of r%, **compounded yearly**, for the five years. The bank manager says that this will give Harinder a return of 17 500 USD.

Calculate the value of r.