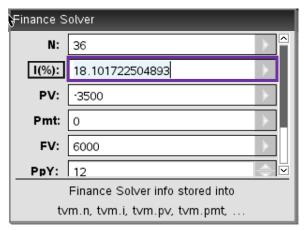# TI-Nspire Finance Solver Compounding Interest Examples

Now that we know the basics about the TI-Nspire finance solver program, let's try a few sample questions using it.

Example.1

Find the interest rates per annum (correct to 2 decimal) that would enable an investment of $3500 to grow to $6000 over 3 years if interest is compounded monthly.

NB:
Number of periods (n) is measured in months
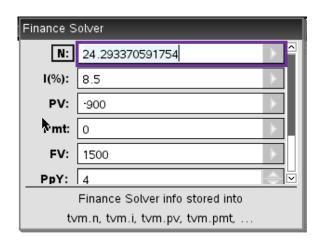Interest rate is p.a.
Principal is being invested $\therefore$ a negative cash flow
No additional payments
Future value is being paid to you $\therefore$ a positive cash flow
PpY and CpY = 12 as compounding is twelve times a year

Entering the data correctly into the finance solver an interest rate of <u>18.10% p.a.</u> is calculated.

Example.2

How long it will take (with interest compounded quarterly) for $900 to amount to $1500 at 8.5% p.a.?

NB:
Number of periods (n) is measured in quarters
Interest rate is p.a.
Principal is being invested $\therefore$ a negative cash flow
No additional payments
Future value is being paid to you $\therefore$ a positive cash flow
PpY and CpY = 4 as compounding is four times a year

Entering the data correctly into the finance solver it will take <u>24.29 quarters</u> for the investment to mature to $1500. This is equivalent to approximately (24.29/4) <u>6 years and 1 month.</u>
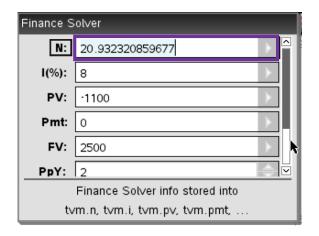
Example.3

Calculate the number of interest-bearing periods, n, required, and hence the time in more meaningful terms when:

V_n = $2500
V_0 = $1100
r = 4% per half-year

NB:
Number of periods (n) is measured in half-years
Interest rate is p.a.
Principal is being invested ∴ a negative cash flow
No additional payments
Future value is being paid to you ∴ a positive cash flow
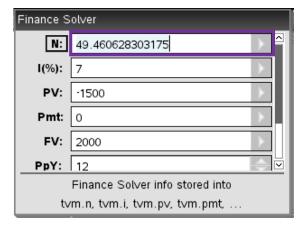PpY and CpY = 2 as compounding is twice a year

Entering the data correctly into the finance solver it will take <u>20.93 half-yearly periods</u> for the investment to mature to $2500.
In real terms you would need 21 half-yearly periods.
This equates to (21/2) = <u>10.5 years.</u>

Example.4

About how long would it take for $1500 to accrue $500 interest at 7% p.a., interest compounded monthly?

NB:
Number of periods (n) is measured in months
Interest rate is p.a.
Principal is being invested ∴ a negative cash flow
No additional payments
Future value is being paid to you ∴ a positive cash flow
($500 accrued interest provides a future value of $2000)
PpY and CpY = 12 as compounding is twelve times a year

Entering the data correctly into the finance solver it will take <u>49.46 months</u> for the investment to accrue $500 interest and to mature to $2000.
In real terms you would need 50 months. This equates to <u>4 years and 2 months.</u>