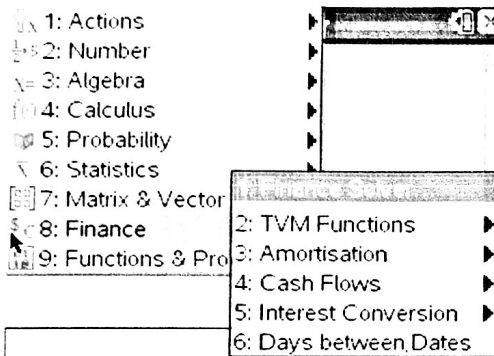


The TVM (Time Value of Money) Solver | MEL4E

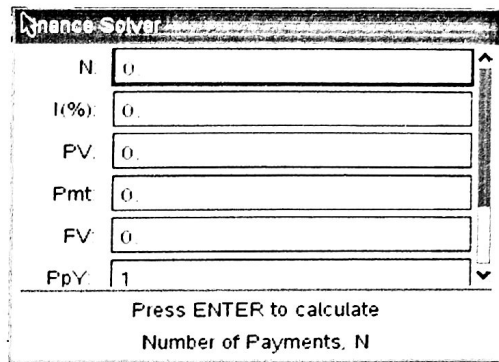
Using the **TVM solver** on the Nspire, we can solve compound interest problems quickly, and we aren't just restricted to finding a future value.

To get to TVM solver from the calculator screen, press: MENU -> 8:Finance -> 1:Finance Solver. It will bring you to the screen displayed below and to the right.

MENU Choices:



Initial Screen



Definitions of the variables for Compound Interest Problems

N = Number of years

I(%) = Interest rate per year (as a whole percent)

PV = Principal or Present Value (P)

Pmt = Amount of any regular payment (set to 0 for now)

FV = Future value (A)

PpY = Number of regular payments per year (set to 1 for now)

CpY = Number of compounding periods per year.

N	# of years
I(%)	interest rate
PV	Principal
Pmt	0
FV	Final Amount
PpY	1
CpY	How often interest is calculated

Some important notes:

- Either PV or FV must be negative (they are negative when something is being paid out)
- A value must be entered for every variable.
- Money coming in → Positive
- Money leaving → Negative

The TVM (Time Value of Money) Solver MEL4E

Example 1: If you borrow \$1,000 for 5 years at 4.8% compounded monthly, how much would you have at the end?

What are we solving for?

a) Use the formula

b) Use the solver

~~$$A = P(1+r)^t$$~~

You would pay back
\$ 1270.64.

N	5	(years)
I(%)	4.8	
PV	1000	
Pmt	0	
FV	1251.80 -1270.64	
PpY	1	
CpY	12	

↑ 12 times per year

You Try It: Jackie invests \$2,000 for help purchasing a new car in 3 years. She can invest her money at 6% compounded weekly. How much will she have in 3 years?

What are we solving for? **FV**

What is CpY? **52**

a) Use the formula:

b) Use the solver

~~$$A = P(1+r)^t$$~~

She would have
\$ 2,394.19

N	3	(years)
I(%)	6	
PV	-2000	
Pmt	0	
FV	2394.19	
PpY	1	
CpY	52	

Example 2: How long would it take \$1,000 to grow into \$2,000 invested at 7% compounded monthly?

What are we solving for? **N**

What is CpY? **12**

It will take about 10
years.

N	9.93	(years)
I(%)	7	
PV	-1000	
Pmt	0	
FV	2000	
PpY	1	
CpY	12	

Note: We will be using these on a daily basis from this point on for the next 2 weeks. It is very important to practice as much as you can!