

4.4 The TVM Solver

- a program on the graphing calculator used for financial calculations

To find the TVM Solver program:

APPS , 1: Finance..., **ENTER** , 1: TVM Solver... **ENTER**

N	= # of years
I%	= interest rate/a as a percent
PV	= present value (P) <i>Principal</i>
PMT	= the payment amount (put as "0" if there are no regular payments)
FV	= future value (A)
P/Y	= number of payments per year (put as "1" if one time lump sum pmt)
C/Y	= number of compound periods per year
PMT:	= choose END



To determine a value:

- move the cursor to the appropriate line and press **ALPHA** **ENTER**

Cash In +pos.

Cash out - neg

Ex. 1 Harriet invested \$4 000 in an investment fund that pays 6.5%/a compounded monthly. How much money is in the account after 8 years?

N= 8 # of years
I%= 6.5 interest rate/a as a percent
PV= 4000 cash out neg-money going out of your pocket into the bank
PMT= 0 no regular payments-this is a one time investment 
→ ? FV=  PRESS ALPHA ENTER = 6718.68
P/Y= 1 one payment
C/Y= 12 compounded monthly
PMT: **END** BEGIN

∴ Harriet has \$6718.68 after 8 years

Ex. 2 How much do you need to invest now at 8.2%/a compounded quarterly to have \$20 000 in 5 years?

N= 5
I%= 8.2
PV= ? \rightarrow 13328.15
PMT= 0
FV= 20000
P/Y= 1
C/Y= 4
PMT: <u>END</u> BEGIN

\therefore I need to invest \$13328.14

Ex. 3 Graham deposits \$4500 into an account paying 3.5%/a compounded monthly. How long will it take him to have \$8000 to buy a motorcycle?

⇒ N = ? N = 16.5
I% = 3.5
PV = -4500
PMT = 0
FV = 8000
P/Y = 1
C/Y = 12
PMT: END BEGIN

∴ It will take 16.5 years

Ex. 4 Jason invested \$1200 in a fund that compounded interest semi-annually. At what rate did he invest at if he earned \$500 interest in 6 years?

N= 6
→ I%=? → 5.89%
PV=-1200
PMT=0
FV= 1700
P/Y= 1
C/Y= 2
PMT: END BEGIN

Ex. 5 Which investment will reach \$10 000 faster?

A: \$7500 invested at
4.5%/a compounded monthly

OR

B: \$8200 invested at
4.2% compounded semi-annually

→ N = ? → 6.4
I% = 4.5
PV = -7500
PMT = 0
FV = 10000
P/Y = 1
C/Y = 12
PMT: END BEGIN

→ N = ? = 4.8
I% = 4.2
PV = -8200
PMT = 0
FV = 10000
P/Y = 1
C/Y = 2
PMT: END BEGIN

★ faster

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