What's Going On?

Checking In

Minds on Present Value

Action! The TVM Solver

Consolidation Exploring the Variables

Learning Goal - I will be able to determine the "Present Value" of compound interest investments.

Checking In

LGL

You decide to invest $5,000 at 2.5%. What is your investment worth after 6 years if it earns

a. Simple Interest?

$I = Prt$

$A = P + Prt$

$A = P(1 + rt)$

$A = 5000(1 + 0.025 \times 6)$

$A = 5750$

Checking In

LGL

You decide to invest $5,000 at 2.5%. What is your investment worth after 6 years if it earns

b. Compound Interest, compounded monthly?

0.025

$$A = P(1+i)^n$$

$$A = 5000\left(1+\frac{0.025}{12}\right)^{72}$$

$$A = 5404.26$$

Minds on

Present Value

How much would you need to invest today, in an investment earning 5% interest compounded quarterly, to have $10,000 in 5 years?

$$\frac{A}{(1+i)^n} = \frac{P(1+i)^n}{(1+i)^n}$$

We want P

$$P = \frac{A}{(1+i)^n}$$

Minds on

Present Value

How much would you need to invest today, in an investment earning 5% interest compounded quarterly, to have $10,000 in 5 years?

$$P = \frac{A}{(1+i)^n}$$

$$P = \frac{10000}{\left(1+\frac{0.05}{4}\right)^{20}}$$

$$P = 7800.09$$

Action!

Compound Interest

How long would it take to double a $5,000 investment that earns 4.5% interest compounded monthly?

$$A = P(1+i)^n$$

$$\frac{10000}{5000} = \frac{5000\left(1+\frac{0.045}{12}\right)^{12\times t}}{5000}$$

$$(1.00375)^{12t} = 2$$

Action!

There's a Better Way!

Action!

TVM Solver

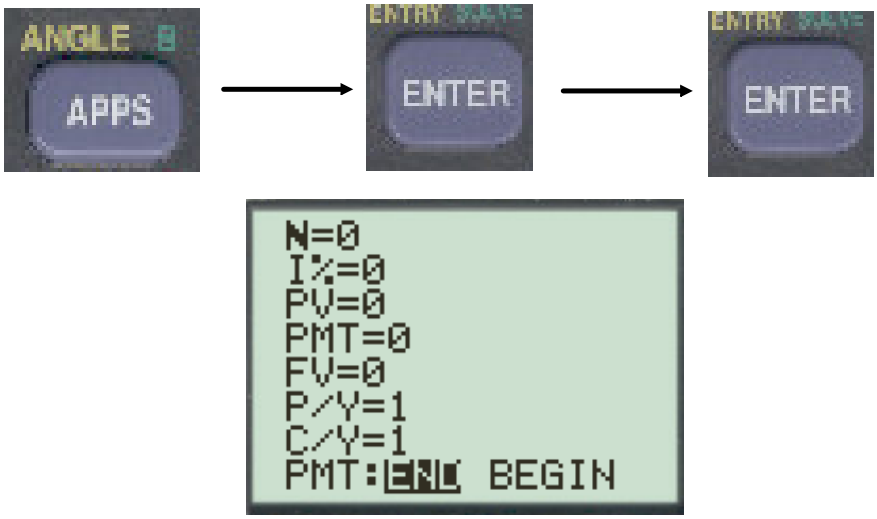
A graphing calculator can do all of this financial work for us! It can even solve for n!

(You still need to be able to solve for A, P and i)

Action!

TVM Solver

Step 1: Open the TVM Solver.



Action!

TVM Solver

Step 2: Enter the variables. (**NOTE: either PV or FV must be entered as negative!**)

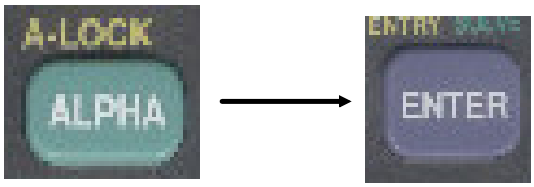
Years of Investment
Interest Rate (%)
Principle (PV)
Final Amount (FV)
Number of Compounding Periods per Year

Action!

TVM Solver

Step 3: Solve for a Missing Variable.

Highlight the variable you wish to solve for. Then



Consolidation

Exploring the Variables