

## Using the Numeric Solver on the TI-89

The numeric solver is useful when you are using the same formula frequently. Basically you store the formula and enter the values for the variables you know and it will solve for the one you need to find.

Let's enter the formula  $A = P\left(1 + \frac{r}{n}\right)^{nt}$  and use it to solve various types of problems.

### To enter the formula:

#### **Apps**

#### **9: Numeric Solver**

(There may be an equation already entered, press **clear** to delete it.)

Key in Equation: **Alpha a = Alpha P\*(1 + Alpha r / Alpha n ) ^ (Alpha n \* t)**

(Be sure to use times between p and ( and n and t or the calculator will assume they are not separate variables. Also the exponent n\*t must be in parentheses.)

**Enter**

(If values appear for all or some of the variables, clear them by **F6:Clr A-Z** then **Enter** and **Enter**.)

### To Save the Equation in the Math Folder

#### **F1: Tools**

#### **2: Save Copy As. . .**

Folder: If Math is not showing, **arrow right and select it**.

Variable: Key in **Value** (or whatever you want to name the equation)

**Enter**

**Enter**

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To access the equation the next time you want to use it, there are two choices after **Apps** then **9: Numeric Solver**

**F5:** lists the last 10 equations used. If the one you want isn't showing, arrow right and select it from the list if it is there.

**Enter**

**OR**

**F1: Tools**

**1: Open**

Folder: Select **Math** (or whatever folder you saved it in)

Variable: if the equation name isn't showing, **arrow right and select it.**

**Enter**

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Once the equation is showing  
**Enter:** to display the variables

**Problem #1: If \$50 is invested at 6% compounded monthly, how much will the account be worth in 3 years?**

Solution: Since A is what we want to find, leave it blank and fill in the other values.

a =

p = **50**

n = **12**

t = **3**

r = **.06**

**Move** the cursor back to a =

**F2: Solve**

The calculator will show a = **\$59.83**

**Problem #2: How much needs to be invested at 8% compounded quarterly so that \$750 will be in the account after 3 years?**

Solution: This time we want to find P, the present value.

a = **750**

p =

n = **4**

t = **3**

$$r = .08$$

**Move** the cursor back to  $p =$   
**F2: Solve**

The calculator will show  $p = \$591.37$ .

**Problem #3: If \$5000 is invested at 10% per year compounded monthly, how long will it take for the money to double (\$10,000)?**

Solution: In this problem, we want to find  $t$ , the time. Enter the values.

$$a = 10,000$$

$$p = 5,000$$

$$n = 12$$

$$t =$$

$$r = .10$$

**Move** the cursor to  $t =$

**F2: Solve**

The calculator will show  $t = 6.96$  years