Using the Numeric Solver on the TI-92

The TI-92 does not have a numeric solver to use with formulas. However, you can use the a combination of Solve commands and restrictions using the **|** (2nd K) key to solve for various values in a formula.

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

Clear previously stored variables by pressing **F6** and **Enter**.

To enter the formula:

In the Home screen key in Equation: **a = P*(1 + r / n) ^ (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.)

Press **Enter** so that the equation is stored in the history area for use later. (When you need it for another problem, arrow up to highlight the equation and press enter.) **Notice the calculator simplifies inside the parentheses by finding a common denominator**.

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

Solution: With the equation entered on the entry line follow it with

> **| p = 50 and n = 12and t = 3 and r = .06**
> **Enter**

> 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. With the equation entered on the entry line follow it with

| a = 750 and n = 4 and t = 3 and r = .08
Enter

This returns an equation with the variable p.

750 = 1.26824 * p

We now need to solve this equation for p.

Clear the enter line by pressing **Clear**

F2: Algebra
1: Solve

Then arrow up to highlight the equation with the variable p and press **Enter**

solve(750 = 1.26824 * p   shows on the entry line. Now tell the calculator which variable to solve for by adding

, p)
Enter

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: This time we want to find t, the time. With the equation entered on the entry line (clear the entry line then arrow up to highlight the equation and press enter) follow it with

| a = 10000 and p = 5000 and n = 12 and r = .10
Enter

This returns an equation with the variable t.

$10000 = 5000 \, (1.10471)^t$

We now need to solve this equation for t.

Clear the enter line by pressing **Clear**

F2: Algebra
1: Solve

Then arrow up to highlight the equation with the variable t and press **Enter**

solve(10000 = 5000 (1.10471)^t shows on the entry line. Now tell the calculator which variable to solve for by adding

, t)
Enter

The calculator will show t = 6.96 years