

## Simple Interest Program

This program can be used to find the amount of simple interest earned on a given principal at a given annual interest rate for a certain amount of time.

```
:simpint ( )
:Prgm
:setMode("Display Digits","Fix 2")
:Input "Principal",p
:Input "Interest rate in decimal form",r
:Input "Number of years",t
:p*r*t → i
:Disp "The interest is",i
:setMode("Display Digits","Float")
:EndPrgm
```

## Quadratic Formula Program

This program will display the solutions of a quadratic equation or the words "No Real Solution." To use the program, write the quadratic equation in general form and enter the values of  $a$ ,  $b$ , and  $c$ . This program gives both real and complex answers.

```
:quadrat ( )
:Prgm
:setMode("Complex Format","RECTANGULAR")
:Disp "AX ^ 2 + BX + C = 0"
:Input "Enter A.",a
:Input "Enter B.",b
:Input "Enter C.",c
:b ^ 2 - 4*a*c → d
:(-b + √(d))/(2*a) → m
:(-b - √(d))/(2*a) → n
:Disp m
:Disp n
:setMode("Complex Format","REAL")
:EndPrgm
```

## Two-Point Form of a Line Program

This program will display the slope and  $y$ -intercept of the line that passes through two points,  $(x_1, y_1)$  and  $(x_2, y_2)$ , entered by the user.

```
:twoptfm ( )
:Prgm
:Disp "ENTER X1, Y1"
:Input x
:Input y
:Disp "ENTER X2, Y2"
:Input c
:Input d
:(d - y)/(c - x) → m
:m*-x + y → b
:Disp "SLOPE ="
:Disp m
:Disp "Y-INT ="
:Disp b
:EndPrgm
```

## Graph Reflection Program

This program will graph a function  $f$  and its reflection in the line  $y = x$ . To use this program, enter the function in  $y1$  and set a viewing rectangle.

```
:reflect ( )
:Prgm
:103xmin/239 → ymin
:103xmax/239 → ymax
:xscl → yscl
:x → y2(x)
:DispG
:(xmax - xmin)/238 → n
:xmin → x
:While x < xmax
: PtOn y1(x),x
: x+n → x
:EndWhile
:EndPrgm
```

## Systems of Linear Equations Program

This program will display the solution of a system of two linear equations in two variables of the form

$$ax + by = c$$

$$dx + ey = f$$

if a unique solution exists.

```
:solvelin( )
:Prgm
:ClrIO
:Disp "Ax+By=C"
:Input "Enter A.",a
:Input "Enter B.",b
:Input "Enter C.",c
:ClrIO
:Disp "Dx+Ey=F"
:Input "Enter D.",d
:Input "Enter E.",e
:Input "Enter F.",f
:If a*e-d*b=0 Then
:  Disp "No unique solution"
: Else
:  (c*e-b*f)/(a*e-d*b) → x
:  (a*f-c*d)/(a*e-d*b) → y
:  Disp x
:  Disp y
:EndIf
:EndPrgm
```