

## 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.

```
PROGRAM:SIMPINT
:FIX 2
:DISP "PRINCIPAL"
:INPUT P
:DISP "INTEREST RATE"
:DISP "IN DECIMAL FORM"
:INPUT R
:DISP "NUMBER OF YEARS"
:INPUT T
:PRT →I
:DISP "THE INTEREST IS"
:DISP I
:FLOAT
```

## 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  $c$ .

```
PROGRAM:QUADRAT
:DISP "AX2+BX+C=0"
:INPUT "ENTER A",A
:INPUT "ENTER B",B
:INPUT "ENTER C",C
:B2-4AC →D
:IF D≥0
:THEN
:(-B+√D)/(2A) →M
:DISP M
:(-B-√D)/(2A) →N
:DISP N
:ELSE
:DISP "NO REAL SOLUTION"
:END
```

## Two-Point Form of a Line

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.

```
PROGRAM:TWOPTFM
: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
```

## 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.

```
PROGRAM:REFLECT
:47XMIN/63 →YMIN
:47XMAX/63 →YMAX
:XSCL →YSCL
:"X" →Y2
:DISPGRAPH
:(XMAX-XMIN)/62 →I
:XMIN →X
:LBL A
:PT-ON(Y1,X)
:X+I →X
:If X>XMAX
:STOP
:GOTO A
```

## 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.

```
PROGRAM:SOLVE
:DISP "AX+BY=C"
:INPUT "ENTER A",A
:INPUT "ENTER B",B
:INPUT "ENTER C",C
:DISP "DX+EY=F"
:INPUT "ENTER D",D
:INPUT "ENTER E",E
:INPUT "ENTER F",F
:IF AE-DB=0
:THEN
:DISP "NO UNIQUE"
:DISP "SOLUTION"
:ELSE
:(CE-BF)/(AE-DB) → X
:(AF-CD)/(AE-DB) → Y
:DISP X
:DISP Y
:END
```