

## TI-85 TI-86

### 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
:P*R*T → I
:Disp "The interest is"
:Disp I
:Float
```

### Quadratic Formula Program

This program will display the solutions to quadratic equations or the words "No Real Solution." To use the program, write the quadratic equation in standard form and enter the values of  $a$ ,  $b$ , and  $c$ . This program gives both real and complex answers. Solutions to quadratic equations are also available directly by using the POLY function.

```
PROGRAM:QUADRAT
:Disp "AX2+BX+C=0"
:Input "ENTER A", A
:Input "ENTER B", B
:Input "ENTER C", C
:B2-4*A*C → D
:(-B+√D)/(2A) → M
:Disp M
:(-B-√D)/(2A) → N
:Disp N
```

### 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.

```
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
```

### Reflections and Shifts Program

This program will sketch a graph of the function  $y = R(x + H)^2 + V$ , where  $R = \pm 1$ ,  $H$  is an integer between  $-6$  and  $6$ , and  $V$  is an integer between  $-3$  and  $3$ . This program gives you practice working with reflections, horizontal shifts, and vertical shifts. Press  after viewing the graph to display the values of the integers.

```
PROGRAM:PARABOLA
:rand → H
:-6+int(12H) → H
:rand → V
:-3+int(6V) → V
:rand → R
:If R < .5
:-1 → R
:If R > .49
:1 → R
:y1=R(x+H)2+V
:-9 → xMin
:9 → xMax
:1 → xScl
:-6 → yMin
:6 → yMax
:1 → yScl
:DispG
:Pause
:Disp "Y=R(X+H)2+V"
:Disp "R=",R
:Disp "H=",H
:Disp "V=",V
:Pause
```

## 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
:63*xMin/127 → yMin
:63*xMax/127 → yMax
:xScl → yScl
:y2=x
:DispG
:(xMax-xMin)/126 → I
:xMin → x
:Lbl A
:PtOn(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 A*E-D*B==0
:Goto A
:(C*E-B*F)/(A*E-D*B) → X
:(A*F-C*D)/(A*E-D*B) → Y
:Disp X
:Disp Y
:Stop
:Lbl A
:Disp "NO UNIQUE SOLUTION"
```

## Sum Program

To use this program, first store the  $n$ th term of the sequence in  $y1$  (in terms of  $x$ ).

```
PROGRAM:SUMS
:Prompt M
:Prompt N
:0 → S
:For(x,M,N)
:S+y1 → S
:Disp S
:End
```