

## HP-38G

### 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 displays the answer in complex form  $(x, y)$ , where  $x$  is the real part and  $y$  is the imaginary part.

```
QUADRAT PROGRAM
INPUT A;"AX^2+BX+C=0";
"ENTER A";";1:
INPUT B;"AX^2+BX+C=0";
"ENTER B";";1:
INPUT C;"AX^2+BX+C=0";
"ENTER C";";1:
B^2-4AC►D:
(-B+√D)/(2A)►Z1:
(-B+√D)/(2A)►Z2:
DISP 3;Z1:
DISP 5;Z2:
FREEZE
```

### Graph Reflection Program not available

### Evaluating an Algebraic Expression Program

This program can be used to evaluate an algebraic expression in one variable at several values of the variable. Use the Solve aplet to evaluate an expression.

1. Press **LIB**. Highlight the Solve aplet. Press **{START}**.
2. Set your expression equal to  $y$ , enter the equation ( $y = \text{your expression}$ ) in E1, and press **{OK}**. The equation should be checked.
3. Press **NUM**.
4. Highlight the  $x$ -variable field. Enter a value for  $x$  and press **{OK}**.
5. Highlight the  $y$ -variable field and press **{SOLVE}**. The value of the expression will appear in the  $y$ -variable field.
6. Repeat steps 4 and 5 to evaluate the expression for other values of  $x$ .

### 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.

1. Input the 2 programs SOLVE and SOLVE.SOLN.
2. Run the SOLVE program.

```
SOLVE
SOLVE PROGRAM
INPUT A;"AX+BY=C";
"ENTER A";";1:
INPUT B;"AX+BY=C";
"ENTER B";";1:
INPUT C;"AX+BY=C";
"ENTER C";";1:
INPUT D;"DX+EY=F";
"ENTER D";";1:
INPUT E;"DX+EY=F";
"ENTER E";";1:
INPUT F;"DX+EY=F";
"ENTER F";";1:
ERASE:
IF AE-DB==0
THEN DISP 3; "NO UNIQUE SOLUTION":
ELSE RUN "SOLVE.SOLN":
END:
FREEZE:
SOLVE.SOLN PROGRAM
(CE-BF)/(AE-DB)►X:
(AF-CD)/(AE-DB)►Y:
DISP 3;"X=X":
DISP 5;"Y=Y":
```

### Visualizing Row Operations Program not available