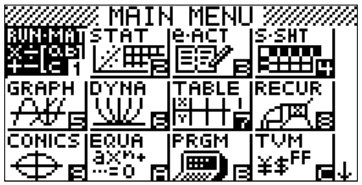
Introducing the Casio *fx*-9860GII Calculator



The **Main Menu** Screen

***Purpose*:**

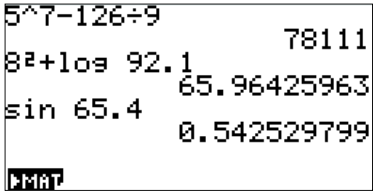
- Select the calculator's various modes.

Procedure:

MENU

◀ ▶ ▲ ▼ (to choose mode) EXE

Alternatively, press the corresponding number/letter key (use ALPHA to select a letter).



RUN·MAT Mode

***Purpose*:**

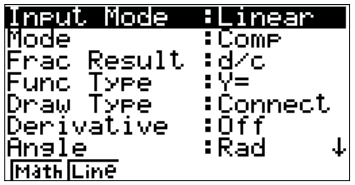
- Numeric computation (including matrix calculations).

Procedure:

MENU 1 (or use the cursor buttons to select and RUN·MAT and press EXE)

Try This:

- Evaluate $\log 4 + 27^2 - \sqrt{155}$
- Evaluate $4.2^5 + e^3 - \sqrt[5]{8.7}$



Linear Mode versus **Math** Mode

***Purpose*:**

Math Mode

- allows natural input and display of expressions
- often simplifies expressions
- often gives "messy" answers in exact form

Linear Mode

- single line for input and display of expressions
- expresses "messy" answers as decimals (rounded if necessary)

- Note that some functions are available in only one of these two modes.

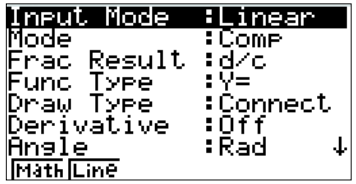
Procedure:

In RUN·MAT mode, SHIFT MENU

Make sure Input/Output is selected (use ▲ ▼)

F1 for Math mode and F2 for Linear mode.

EXE



Linear Mode versus **Math** Mode
(continued)

Try This:

- Evaluate $\sqrt{8}$ in Linear mode and in Math mode.
  - Try using the [F↔D] button with your answers.
- Evaluate $\frac{7}{18} - \frac{51}{6} + 4\frac{5}{27}$ in each mode.
  - Try using the [a b/c] button.
  - Try using the [F↔D] button with your answer.
- Evaluate $\sin\frac{5\pi}{12}$ in Linear mode and in Math mode.
  - You can switch the type of angle measure using [SHIFT] [MENU].
  - Try using the [F↔D] button with the answer.
- Evaluate $|\log_5 3.4|$ in Math mode.
  - Use [F4] to access additional functions.

Function Memory

***Purpose*:**

- Store and recall functions for repeated use.

Procedure:

IMPORTANT

Calculator must be in **Linear** mode.
In RUN·MAT mode, press [SHIFT] [MENU] [F2] [EXE]

In RUN·MAT mode, input a function (use [X,θ,T] to input the variable *x*).

[OPTN] [F6] [F6] [F3] [F1]

Choose a function number (1 to 20) and press [EXE] to store. [EXIT]

To recall, [OPTN] [F6] [F6] [F3] [F2]

Choose a function number (1 to 20) and press [EXE].

Function Memory
(continued)

To evaluate at a specific value,

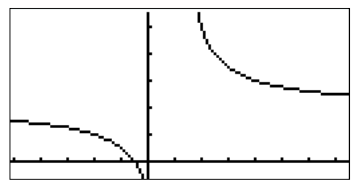
[OPTN] [F6] [F6] [F3] [F3]

Enter the function number, immediately followed by the value at which it is to be evaluated in brackets.

For example, to evaluate function 1 at 7.25,

[1] [(] [7] [•] [2] [5] [)] [EXE]

To evaluate at another value, press [F3].



GRAPH Mode

***Purpose*:**

- Graph and analyze relations.

Procedure:

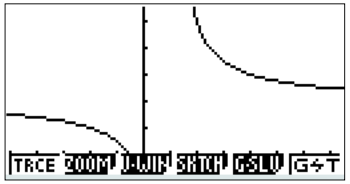
[MENU] [5] (or use the cursor buttons to select GRAPH and press [EXE])

Input a function for one of the Y equations (use [X,θ,T] to input the variable *x*).

[EXE] [F6] ([EXIT] to return)

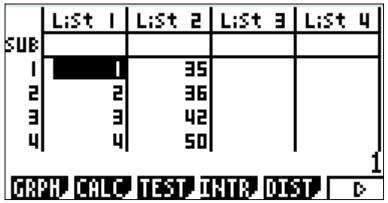
Try This:

- Graph $y = 5x^2 - 2x - 10$ and $y = 14x + 1$ on the same axes.
  - Use [F5] (G-Solv) to analyze the curves.
    - Find the roots (zeros) of the functions.
    - Find the parabola's minimum value.
    - Find the point where the graphs intersect.
    - Find the parabola's x-values when its *y*-value is 17.



GRAPH Mode
(continued)

- Use (F2) (Zoom) to experiment with the zoom options.
- Use (F3) (V-Window) to adjust the view window settings.
- Use (F1) (Trace) and the cursor buttons to trace each curve and see its values. Enter an *x*-value to see the corresponding *y*-value.
- Use (F6) to toggle between the equation window and the graph window.
- From the equation window, experiment with line styles ((F4)) and turning graphs on and off ((F1)).
- Restrict a graph's domain using commas and square brackets. For example, Y1=14X+1,[2,5]



STAT Mode

***Purpose*:**

- Create graphs from data and perform regression analysis.

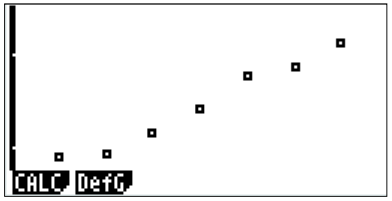
Procedure:

(MENU) (2) (or use the cursor buttons to select STAT and press (EXE))

Enter *x* values in List 1 and corresponding *y* values in list 2 (press (EXE) to enter the value and use the cursor buttons to navigate).

To graph, press (F1) (GRPH) and select a graph number.

To perform regression analysis, press (F1) (CALC) and select the type of regression. Press (F6) (DRAW) to draw the regression curve.



STAT Mode
(continued)

Try This:

- Create a scatter plot of the data shown on the right.

X	*y*
0	406
1	603
2	769
3	862
4	939
5	938

- Determine the linear and quadratic regression equations and superimpose the curves on the graph.

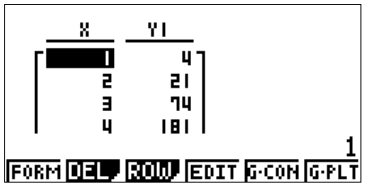


TABLE Mode

***Purpose*:**

- Create a table from an equation.

Procedure:

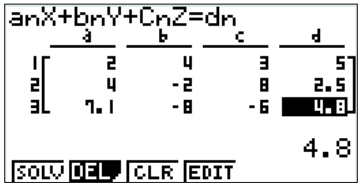
(MENU) (7) (or use the cursor buttons to select TABLE and press (EXE))

Input a function for one of the Y equations.

(EXE) (F6) ((EXIT) to return)

Try This:

- Create a table for the functions $y = \sqrt{x}+2$.
  - Use (F5) (SET) to set the start, end and step values.
  - Use the table to determine the value of *y* when *x* is 5.24.



EQUA Mode

Purpose:

- Solve polynomial equations and systems of equations.

Procedure:

MENU X,θ,T (or use the cursor buttons to select EQUA and press EXE)

To solve a system of equations, press F1 (Simultaneous), select the number of unknowns, input the coefficient values and press F1 (SOLV).

Polynomial equations can be solved in a similar manner (select Polynomial instead of Simultaneous).

Try This:

- Solve the following system of equations:

$$5x + 2y = -3$$
$$-2x - 6y + 11 = 0$$

- Solve the equation $5.2x^3 - 7.1x^2 + 1.3 = 0$.

Resetting the Memory

Purpose:

- To clear information stored in the calculator's memory.

Procedure:

MENU ab/c (or use the cursor buttons to select SYSTEM and press EXE)

F5 (RSET)

F2 (Main Memories)

F1 (Yes)

- **Note:**
  Other memories, such as Storage Memory, can also be cleared if necessary, but in most cases only the Main Memory should be reset.