CASIO®

Support Classroom with Technology

Easy-to-operate, high-definition 3D Graph provides visual support for mathematical exploration.

Graphing Scientific Calculator

fx-CG50

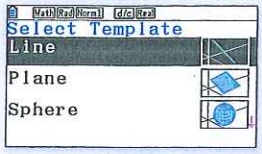
Take advantage of easy-to-operate, high-definition 3D Graph in mathematics learning that is intuitive and easy to understand.*1

3D Graph

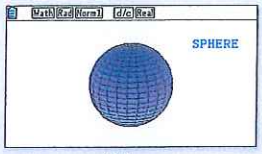
① 3D graph types

Four types of 3D graphs (Sphere, Cylinder, Plane, and Line) are available. Draw various kinds of 3D graphs and examine them visually.

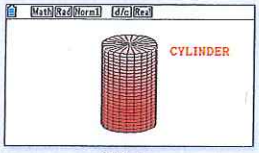
*1 It's easy to draw 3D graphs using templates. (An industry-first feature)



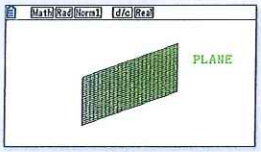
Template



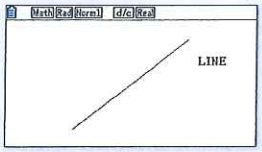
Sphere



Cylinder



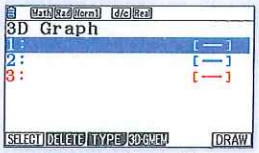
Plane



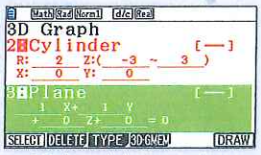
Line

② Draw and display up to three 3D graphs.

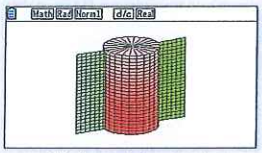
Recognize combinations of 3D graphs and interactive relationships between two or three graphs mathematically.



Three expressions available



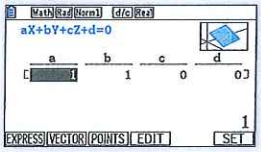
Cylinder and plane expressions


Cylinder and plane graphs

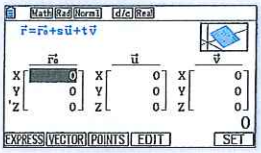
③ Investigate the relationship between expressions and 3D graphs.

Expression

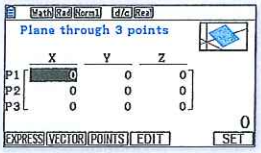
3D graph



EXPRESS



VECTOR format



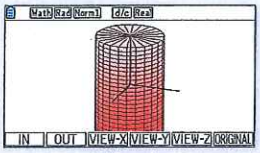
POINTS format

Select EXPRESS, VECTOR, or POINTS format when inputting expressions of 3D graphs.

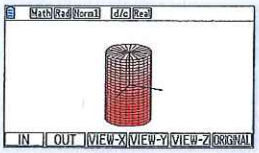
④ Explore 3D graphs mathematically.

❶Zoom in and zoom out ❷Rotation vertically and horizontally ❸Cross section ❹X-axis, Y-axis, Z-axis view. These functions are effective in exploring 3D graphs geometrically.

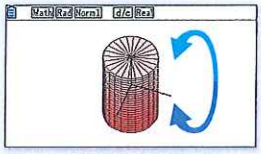
Cylinder

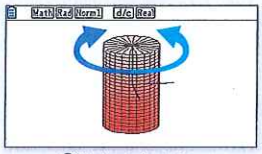


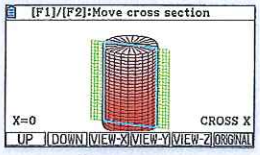
❶Zoom-in



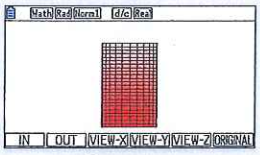
❶Zoom-out


❷Vertical rotation

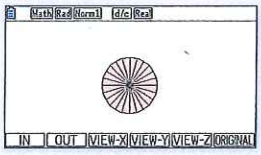

❷Horizontal rotation



❸Cross section



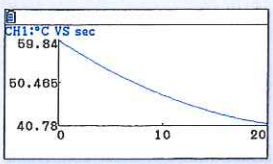
❹X-axis view



❹Z-axis view

E-CON4 Application

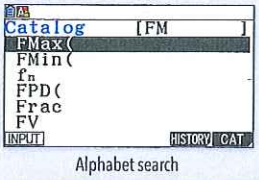
This feature, with a simple user interface, is effective for collecting data for use in classroom science and technology lessons.



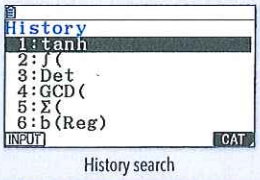
This feature has Auto-ID recognition, which enables drawing of graphs of collected data automatically with no complicated settings.

Catalog Function

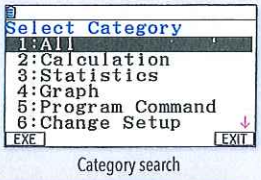
Select the desired command easily and quickly using the catalog function.



Alphabet search



History search



Category search

Examination Mode

This mode allows you to quickly prepare your calculator for exams. This mode restricts access to memory, programs, functions and applications, so that these features would not be available during exams.

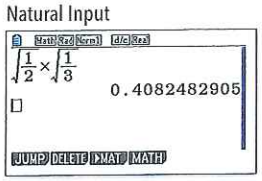
The innovative color display and 3D Graph dramatically increas

Includes Many Basic Calculator Functions

Natural Textbook Display!

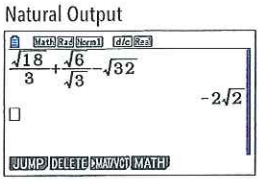
CASIO's original "Natural Expression Input Display" and "Natural Expression Output Display" make it possible to display fractions, exponents, logarithms, powers, and square roots just as they are written in the textbook. The result is enhanced student comprehension and improved math class efficiency.

Natural Input



Input expressions and arithmetic operations as they appear in written form.

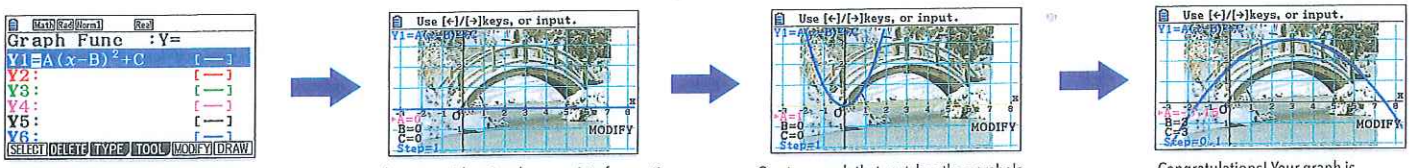
Natural Output



Calculation results appear in the same format as they are written.

Graphing

Students can create a wide variety of graphs over real-life visual backgrounds.



Select the formula for the graph you want to create.

A graph screen with a visual appropriate for creating a graph of the selected function is displayed.

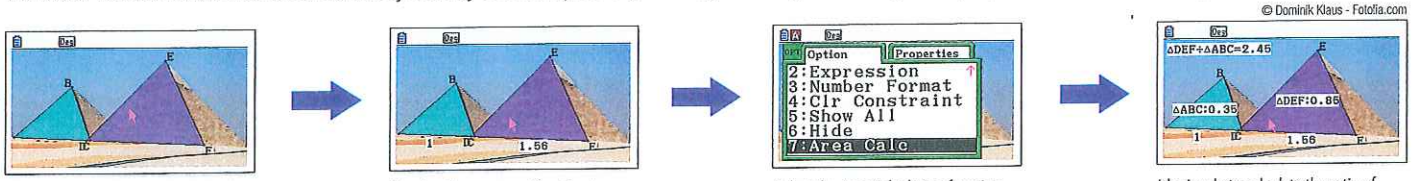
Create a graph that matches the parabola in the visual by repeatedly inputting values.

Congratulations! Your graph is complete.

Geometry

The use of real-life visuals makes it fun and easy to study various aspects of geometry, including the drawing of shapes, movement, and similarity relations.

© Dominik Klaus - Fotolia.com



Draw a shape that corresponds to the background.

Use the Measurement function to measure base length.

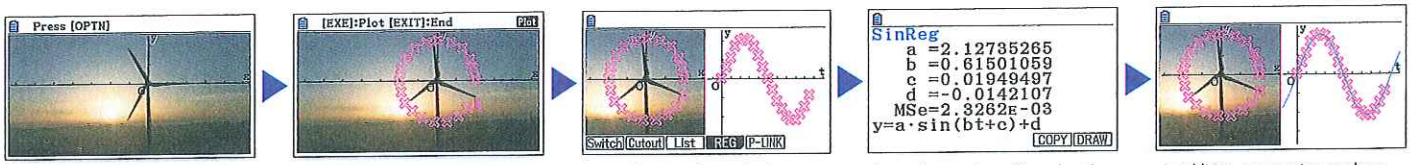
Select the Area Calculation function.

It's simple to calculate the ratio of surface area and other information.

Picture Plot

Students can search for and plot curves found in nature and their surroundings. Analysis of the plotted data deepens understanding of the function.

© JoLin - Fotolia.com



Select an image file.

Create a plot over the selected image.

It's possible to simultaneously draw a graph of the time axis by using time values.

Regression can be performed on the graph of the time axis.

In addition, a regression graph can be drawn.

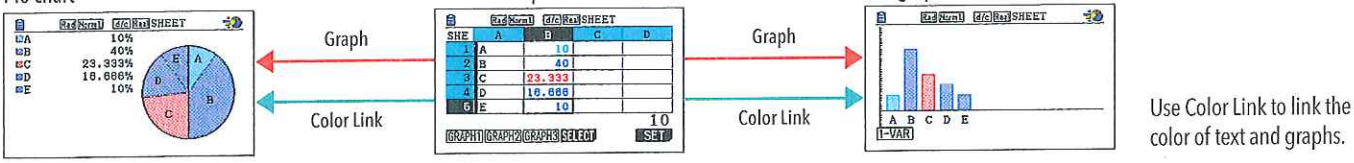
Color Link

The fx-CG50 features the Color Link function, which automatically links colors specified on the spreadsheet screen with colors used in graphs to support learning of functions by enabling visual confirmation of changes in values or trends.

Pie chart

Statistics / Spreadsheet

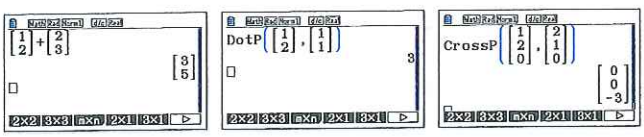
Bar graph



Use Color Link to link the color of text and graphs.

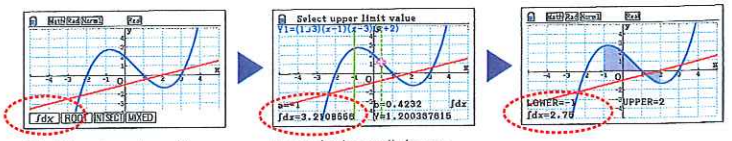
Vector Calculation

Perform operations on vectors and calculate the inner product and outer product.



Integral calculation improvement

Verify the integral value in real time while freely moving the interval using the cursor key.



Select target graphs and lower bound.

Integral values will change dynamically!!

math learning efficiency.

Graphics | Colour Display | Natural Textbook Display

fx-CG50 is suitable for AP, SAT, SAT Subject, PSAT, NMSQT, ACT & IB examinations.

AP/SAT/ SAT Subject/ PSAT/NMSQT/ ACT/IB

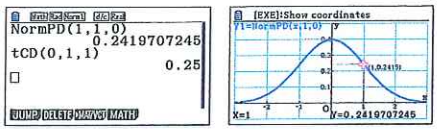
eActivity

The fx-CG50 comes with the same eActivity capabilities first introduced on the ClassPad. This feature allows teachers and students to create their own problems or study materials and enables students to learn at their own pace and study more efficiently at school or at home. eActivity is a great motivator for learning and understanding.

Other Features

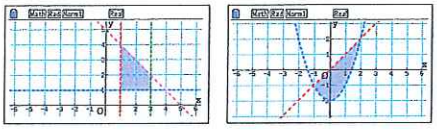
Probability

Normal distribution, Student's t-distribution, and other often-used statistical calculations are provided in function format for easier practical application.



Inequality Graphing

New support for graphing the inequality of an $x=$ Constant graph and $x=f(y)$ graph allows study of the area for which the x-range is defined.



List-based Statistics

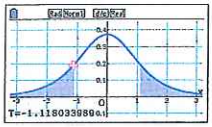
Store a list of values in memory for use when performing function and statistical calculations, when drawing graphs, or when generating tables of numeric values.

Spreadsheet

A multi-function spreadsheet with built-in graphing capabilities is a valuable tool for table calculation lesson exercises.

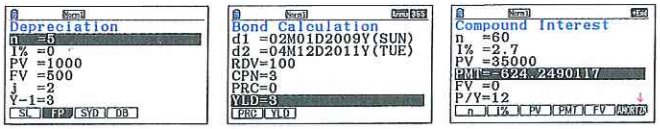
Advanced Statistics

Perform tests, confidence interval, probability distribution, and other calculations and graphing.

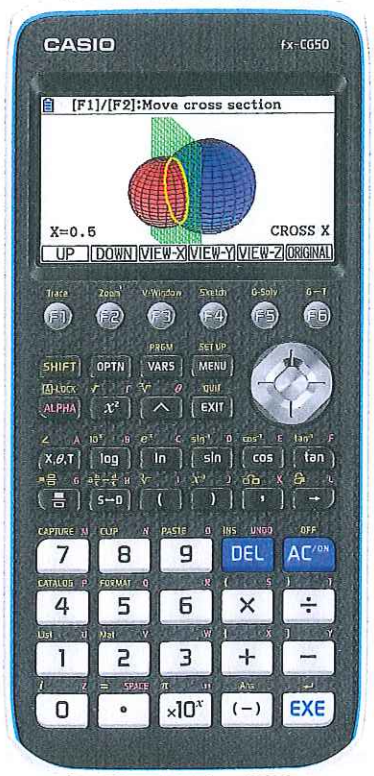


1-sample t-test graph

Financial Calculations



Depreciation | Bond calculation | Compound interest



Graphics

over 2,900 FUNCTIONS

61,000 bytes

Natural Textbook Display

List-based STAT

Multi-replay

21 characters by 8 lines

10+2 DIGITS

ICON MENU

DOT MATRIX

Plastic Keys

Add-in Software

Pre-installed Software

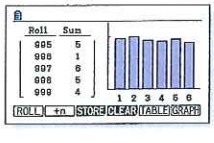
Pre-installed add-in software comes installed on the calculator when you purchase it. You can use such software as-is, or you can delete it to free up memory.

● 3D Graph ● Geometry ● Picture Plot ● Conversion ● Physium

Add-in software can be downloaded from the CASIO website.
http://edu.casio.com/dl/

Probability Simulation*

Simulate probability events using dice roll, coin toss, or card draw and perform statistical analysis.



•Coin Toss •Marble Grab •Dice Roll •Card Draw •Spinner •Random Numbers

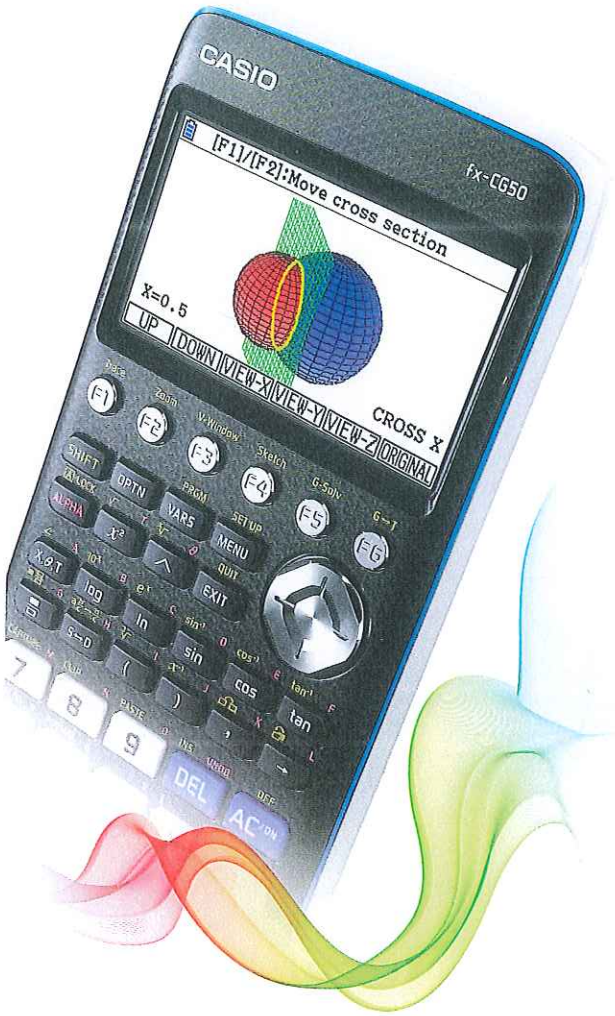
* Downloading from the Web and user installation is required.

fx-CG50

Please visit the website for details. ▶
http://edu.casio.com/products/graphic/

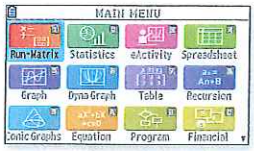
A CASIO graphing calculator with powerful advantages

Three key features make the fx-CG50 ideal for mathematics learning.

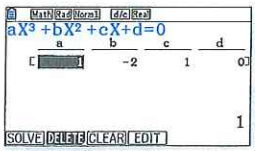


1 Intuitive operation

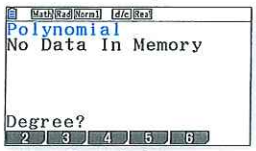
The user-friendly Icon menu, Function keys, and Interactive format enable intuitive operation.



Icon menu



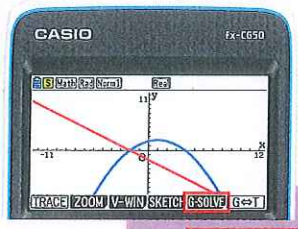
Function keys

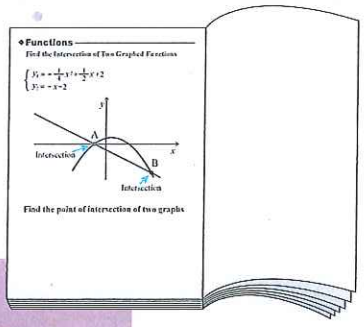


Interactive format

2 G-Solve feature

Use the G-Solve feature to easily solve problems involving intersections, roots, and integration.



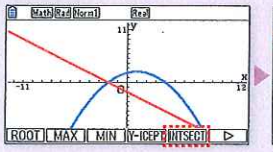


Exercise in a textbook

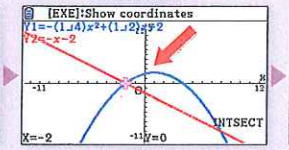
G-Solv Click

Find the point of intersection of two graphs by simply pressing the G-Solv key.

Intersection 1

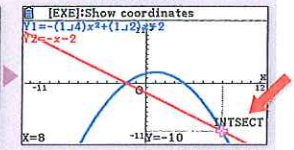


INTSECT



A (−2, 0)

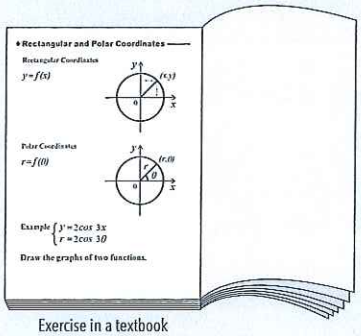
Intersection 2



B (8, −10)

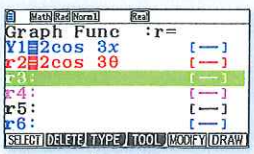
3 Explore feature

Freely explore mathematics by drawing graphs on rectangular coordinates and polar coordinates.

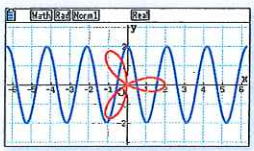


Exercise in a textbook

Since rectangular coordinates and polar coordinates can be displayed on the same screen, their interaction can be understood.



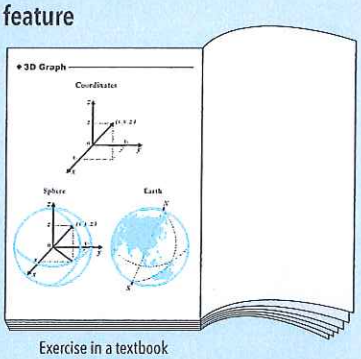
Expression



Graph

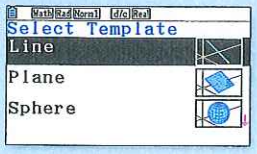
Learning about 3D graphs using the Explore feature

It's difficult to understand 3D graphs used in textbooks. The 3D Graph feature of the fx-CG50 makes it easy to draw and explore 3D graphs. This feature promotes mathematical understanding of 3D graphs and helps in learning solid figures.

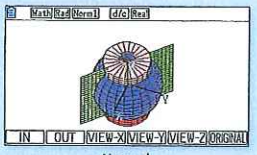


Exercise in a textbook

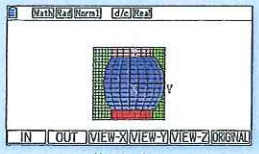
1. It's easy to draw 3D graphs using templates.



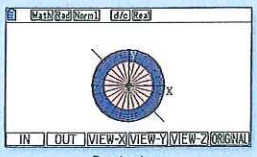
2. View 3D graphs from various angles.



Normal

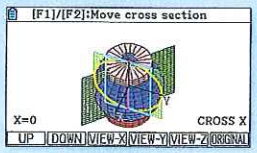


X-axis view

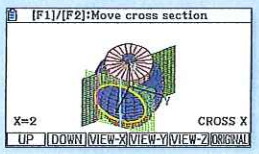


Z-axis view

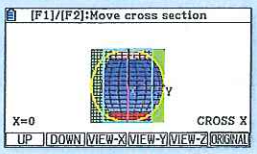
3. Explore 3D graphs in different ways.



Cross section x = 0



Cross section x = 2

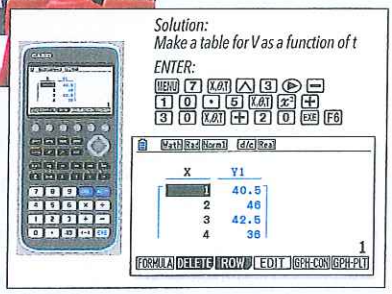


Cross section X-axis view

Software (Manager)

Manager is a software program that emulates the operation of Graphing calculator fx-CG50. This enables teachers to prepare teaching materials (Activities) and present them in the classroom using a projector (Workshops).

Workshop



Activity

Subscription Methods

There are two ways to subscribe: online or by card.

fx-CG Manager PLUS Subscription

for fx-CG Series

•fx-CG50 Calculator Emulation
for Windows
for Mac

*fx-CG Manager PLUS Subscription for fx-CG20 Series license holders can utilize fx-CG Manager Subscription for fx-CG50 Series with the same license.

Online Card

Licensing Options

CARD

License expiration period: 1 year
- •FA-CG1SA (Single License)
- •FA-CG1SB (10 Licenses)
- •FA-CG1SC (30 Licenses)
- •FA-CG1SD (100 Licenses)

Online

License expiration period: 1 year
- •FA-CG1-W1A (Single License)
- •FA-CG1-W1B (10 Licenses)
- •FA-CG1-W1C (30 Licenses)
- •FA-CG1-W1D (100 Licenses)

License expiration period: 3 years
- •FA-CG1-W3A (Single License)
- •FA-CG1-W3B (10 Licenses)
- •FA-CG1-W3C (30 Licenses)
- •FA-CG1-W3D (100 Licenses)

Specifications

Basic Functions

• Angle unit, Angle unit conversion (Deg, Rad, Gra) • Trigonometric functions, Inverse trigonometric functions • Hyperbolic functions, Inverse hyperbolic functions • Exponent functions, Logarithmic functions • Power functions (square root, cubic root, square, power, radical root) • Coordinate conversion (Pol, Rec) • Combination/Permutation (nCr, nPr) • Factorial, Inverse, Random numbers, Random sampling of an existing list, Fractions • Logical operations • Sexagesimal ↔ Decimal conversion • Matrix calculations • Vector calculations • Complex number calculations • Base-n calculations/conversions • List data calculations • Rounding • Display format • Conversion (pre-installed software) • Engineering symbol calculation • Engineering notation

Graphing

• 3D Graph (pre-installed software) • Rectangular coordinate graphing, Polar coordinate graphing • Integration graph • Parametric function graphing, Inequality graphing • Trace, Zoom (box zoom, zoom in, zoom out, auto zoom) • Table and Graph • Dual Graph (table and graph, graph and graph) • Sketch (tangent line, normal line, inverse function) • Solve (root, minimum, maximum, intersection, integration: integral calculation improvement (real-time integral calculation), new integral calculation function (mixed integrals)) • Dynamic graph • Conic section graph • Recursion graph • Picture Plot (pre-installed software)

Calculus

• Derivatives, second derivatives, integrations • Sigma feature

eActivity

• eActivity creation and exploration

Statistics

• List-based one-variable and two-variable statistical analysis • Statistical regression calculations • Statistical plot (scatter plot, xyLine, normal probability plot, histogram, box plot) • Statistical regression graphs (linear, med-med, quadratic, cubic, quartic, logarithmic, exponential, power, sinusoidal, logistic regression) • Advanced statistical calculations: tests (Z-test, t-test, χ^2-test, F-test, ANOVA), intervals (Z-interval, t-interval), distributions • Pie chart • Bar graph

Other Features

• E-CON4 • Natural format equation input • Calculation history • Spreadsheet and statistical plot • Numeric equation solver, simultaneous equations (equation application improvement), polynomial equations • Financial calculations • Programming • Geometry (pre-installed software) • Probability simulation • Icon menu, full-screen/split-screen display • Auto parenthesis addition • Data communication • User memory: 61,000 bytes, User storage memory: 16 M bytes

Hardware

• Dimensions H × W × D (mm): 18.6 × 89 × 188.5 • Approximate weight (g): 230 (including batteries) • Power supply: Four AAA-size alkaline batteries or four nickel-metal hydride batteries • Approximate battery life (hours)*: 170 (AAA-size alkaline batteries), 100 (nickel-metal hydride batteries) • Dot matrix display: 216 × 384 dots • Display capacity (characters): 21 × 8 • Internal operation digits: 15 • Nested parentheses levels: 26 • Data communication: 3-pin cable, USB cable • 3-pin serial port • USB port

*Repeat of following three-step cycle each hour. (1) Menu display for 5 minutes (2) Run-Matrix mode calculation for 5 minutes (3) Flashing cursor in Run-Matrix mode for 50 minutes.

** Comes with slide-on hard case*

Visit our website for more information about the fx-CG50. http://edu.casio.com

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