CASIO®

Introductory
Graphics Calculator
Workshop

Using the Casio CFX-9850GB PLUS

GETTING STARTED WITH THE CFX-9850 GB PLUS

Turning ON

- Press the AC/^{ON} key.

When you turn your CFX 9850 on, you will see the main menu screen. Each icon on the main menu screen stands for a MODE on the calculator.

Below is a short summary of the main purpose(s) of each mode.

RUN – The scientific calculator

STAT – For statistical calculations

MAT – To enter, and perform row/column operations upon, matrices

LIST – To manipulate lists (can also be done in STAT mode) or change List Files.

GRAPH – To graph and analyse functions, parametric graphs and polar graphs.

DYNA – To look at the effect of a changing constant on the graph of a function.

TABLE – Will produce a table of values for any function.

RECUR – To produce tables and graphs from and analyse recursive relations.

CONICS – To graph and analyse conics.

EQUA – Will solve simultaneous equations and polynomials. Also contains an equation solver to find the value of any pronumeral in an equation.

PRGM – Program mode. Use this mode to write programs. Stores and executes programs also.

TVM – Time Value of Money. For financial calculations.

LINK – Allows the calculator to link to a PC or another calculator to transfer programs and data.

CONT – Contrast. Adjusts the contrast and colour balance.

MEM – Memory. Shows memory usage and allows you to reset individual memories or the entire calculator. Note that resetting the calculator will delete stored data and programs.

Resetting the Calculator

Resetting the calculator serves two main purposes:
1. It clears any previous operations that the current user may not be familiar with or want to use.
2. It returns the calculator to its initial default settings.

♦ To reset the calculator, using the arrow keys highlight the MEM (memory) icon and press the blue EXE key. To select RESET, use the down arrow followed by EXE. Press YES (F1) followed by the MENU key to return back to the menu screen.

```
Memory
Memory Usage
Reset



To Select:[↑][↓]
To Set    :[EXE]
```

```
************************
*        RESET         *
************************

RESET ALL MEMORIES?

[F1]              [F6]
YES   RESET ALL   N o
```

The Function Keys – F-Key(s)

To use the calculator effectively, it is important to understand how the function keys work, that is the F1 to F6 keys. These keys actually correspond to options that appear along the bottom of the calculator screen once a mode has been entered. This is illustrated in the screen shown opposite which is in the GRAPH mode. These functions keys are continuously used and you should be very familiar with how they work.

```
Graph Func  :Y=
Y1:
Y2:
Y3:
Y4:
Y5:
Y6:
SEL DEL TYPE COLR GMEM DRAW
```
F1 F2 F3 F4 F5 F6

Other important keys:
(-) is the change of sign key and should only be used for this purpose

◁△▷ The four arrow keys to move the cursor around the screen
  ▽

EXE should be pressed to enter a mode and also after typing information into the calculator
EXIT will take you back a step
MENU will take you back to the main menu

THE SCIENTIFIC CALCULATOR

The **CFX-9850 GB PLUS** has identical capabilities to that of a scientific calculator. It has a keyboard almost identical to that of a scientific calculator. All those operations performed on a scientific calculator can be accessed using the RUN mode (MENU 1). To complete a calculation, first type an expression into the command line and press the blue EXE key to execute the command. The EXE key (located in the bottom right hand corner) replaces the '=' key on the scientific calculator.

♦ The yellow SHIFT key enables the user to access the yellow (secondary) functions located above the calculator keys.

♦ Casio Scientific and Graphic Calculators use S-VPAM (Super Visually Perfect Algebraic Method), that is 'how you say / write it, is how you enter it'. For example, the square root of 12 is entered by SHIFT then X^2 followed by 12, i.e. $\sqrt{12}$.

♦ The power (exponentiation) function is accessed using the $\wedge$ key (next to the EXIT key. For example, 2^6 is entered as $2 \wedge 6$ followed by EXE.

♦ The (red) ALPHA key will allow you to access the red secondary functions.

♦ The F↔D key converts a fraction to a decimal or a decimal to a fraction once a calculation has been completed (non terminating decimals are not included!).

The Run Mode

Enter into the RUN mode from the main menu by using the arrows to highlight the RUN mode then press EXE, or from the main menu simply press 1.

Because the calculator has been reset, it has returned to its initial default settings. To examine the default settings of the RUN mode press SHIFT then MENU (SETUP).
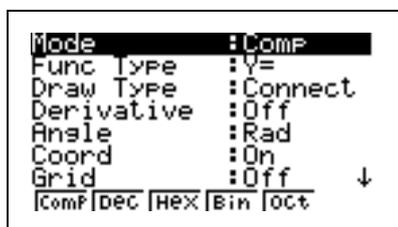
Notice, for example, that the default setting for an angle is currently radians. Scroll down the screen, using the arrows, to highlight Angle. At the bottom of the screen you have three options for Angle:

Deg (degrees), Rad (radians) and Gra (gradients)
F1   F2   F3

Press the F-key that corresponds to degrees (i.e. F1) and note that the option has now been changed on your screen. Press the EXIT key, then enter 10cos60 and press EXE.
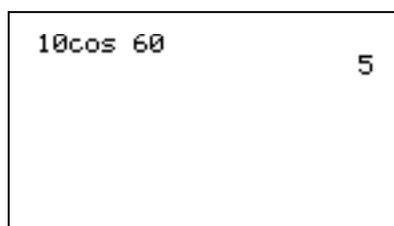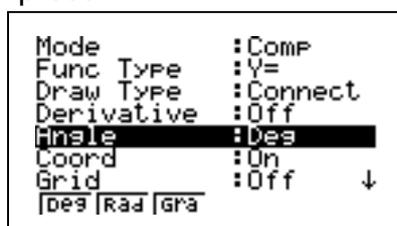
Note that you have now changed the angle setting of the calculator to degrees. The calculator will remain in degrees until you either reset the calculator or alter the setting as you have recently done.

Memories

Results can be stored in one of twenty six variable memories by using the ➡ key followed by any of the letters A – Z. Recall, that to access a letter first press the red ALPHA key followed by the corresponding letter that you want to use, then press the EXE key.
(N.B: the letters are in red and are secondary key functions).

```
6→L
              6
7.5→B
            7.5
2.3→H
            2.3
```

```
LB
              45
LBH
           103.5
L(1+B−2H)
            23.4
```

The calculator understands the mathematical syntax, such that LB is interpreted as L x B.

Number patterns – A.P's and G.P's

The last command line is automatically stored in the Independent Memory. Useful and practical applications of this feature involve generating Arithmetic or Geometric Progressions, generating Time Payment or Superannuation sequences.

Store the first term of the sequence by entering the number then pressing EXE. For example, to generate an A.P enter the first term 5 EXE, then enter the common difference + 7, then press EXE repeatedly; this will generate the A.P which has been constructed.

```
5
              5
Ans+7
             12
             19
             26
             33
```

```
40
             40
Ans×0.5
             20
             10
              5
            2.5
```

```
5000×1.05−500
          4750.00
Ans×1.05−500
          4487.50
          4211.88
          3922.47
          3618.59
```

```
1000×1.06
          1060.00
Ans+1000×1.06
          2120.00
          3180.00
          4240.00
          5300.00
```

GRAPHING FUNCTIONS

Enter the GRAPH mode from the main menu.

The ☐ Key

The variable key is located just under the red ALPHA key. This key is the only key to be used when entering a variable in an equation.

The View-Window

The view-window option displays the dimensions and scale of the axes that appear on the calculator screen. To access this screen, press SHIFT F3. There are three default windows that are set up for you already. These are INITIAL (F1), TRIGONOMETRY (F2) and STANDARD (F3). The default setting is INITIAL.
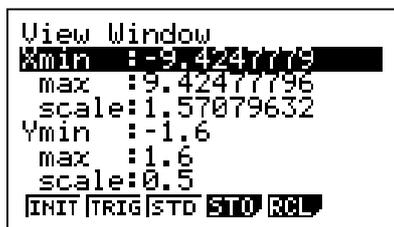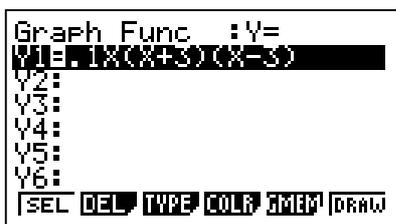

Press EXIT to leave this screen.

Drawing a Function

Type into Y1 the equation .1X(X+3)(X-3) then press EXE to store the function. To draw, press DRAW (F6).

Trace the function by pressing TRACE (SHIFT F1). By using the left and right arrows, you can trace the graph. Use the trace function to find the roots of this equation.
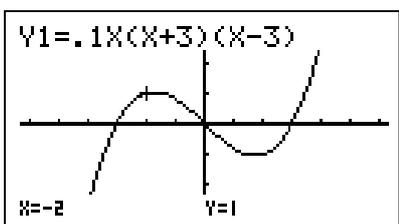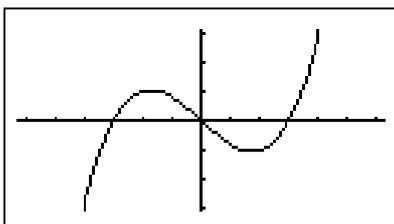

G-Solve

G-Solve stands for Graph Solve. To access G-Solv press SHIFT then F5. With G-Solve, you can find roots, maximums, minimums, the y intercept, intersection points, as well as perform integrations. Press F1 (ROOT) to find the first root of the equation. To access the second and third roots, press the right arrow key.
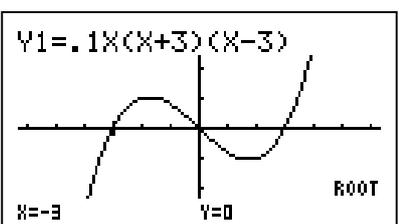
Integration

Press G-SOLV (SHIFT F5) then F6 (the continuation key) and finally ∫dx (F3). Use the left arrow key to set the lower limit at X=-3 then press EXE. Set the upper limit at X=0 and press EXE.
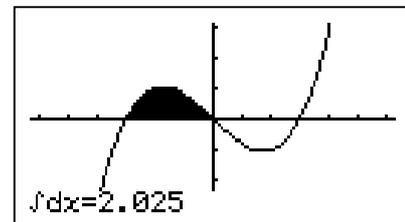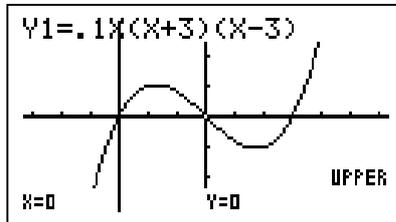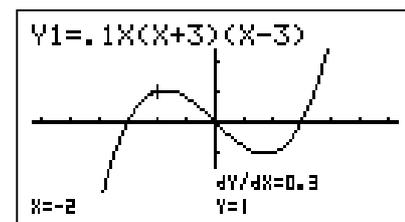
Finding the gradient of the tangent at a point

Press SHIFT MENU to enter the SETUP of the graph mode. Highlight **Derivative**, and press ON (F1). Press EXIT and DRAW (F6) then trace the function again by pressing TRACE (SHIFT F1). This will now show the derivative at each point on the function.

Graphing The First and Second Derivative

To graph the derivative of this function, press EXIT to allow you to type in another function and highlight Y2. Press OPTN, CALC, d/dx (F1). Then press VARS, GRPH (F4), Y (F1). Then type 1, X and close the brackets. Press EXE and DRAW (F6). You can trace these graphs by pressing TRACE (SHIFT F1). To trace the graph of the derivative, press the down arrow. It is possible to draw the derivative in a different colour than the original function.
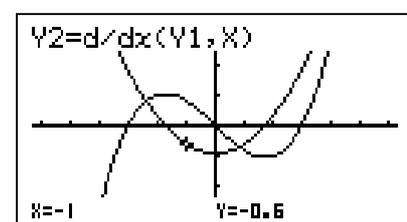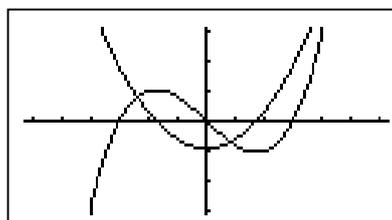
It is possible to draw the second derivative of the function using the same process.

Zooming and Sketching

Once you have drawn a particular function, by pressing SHIFT F2 you will activate the Zoom option. This allows the user to zoom in or out from a particular point on the function by a given or specified factor. It will also allow the user to zoom in on a specific part of the graph, for example a root or point of intersection.

Again, once a function has been drawn, you can activate the Sketch option by pressing SHIFT F4. Using this option allows us to sketch tangents, normals, inverse functions, draw a circle with a specified radius, sketch vertical and horizontal lines and more!

Absolute Value Graphs

To draw an absolute value function first press OPTN followed by NUM (F5) then Abs (F1). If there is more than one term in the function to be sketched, make sure that brackets are used after the Abs notation.
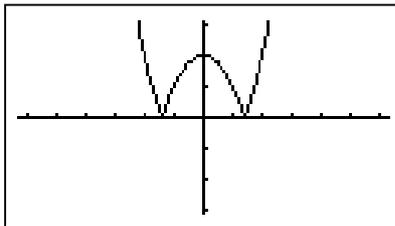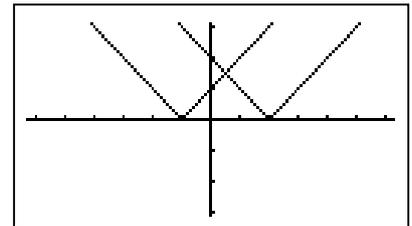
Inequalities

From the text screen in the GRAPH mode, press TYPE (F3) then the continuation key (F6) and the options for sketching inequalities will appear on the screen. Press Y> (F1) and note the change at the top of the screen. Enter the equations as shown below, draw and observe the region satisfied by the two inequalities.
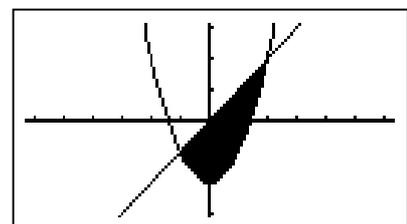
Families of Functions / Restricted Domains

The GRAPH will allow us to investigate families of functions in a very purposeful and constructive manner. For example, if a student wants to understand the effect of the addition of a constant in a quadratic function.

The { } parentheses, secondary functions above the multiplication and division keys, allow us to construct and draw a family of functions. To complete this investigation make Y1 = x^2 + {-2, -1, 0, 1, 2}, store and draw the function using the initial view window. Note that all five functions will be draw on the same coordinate plane.
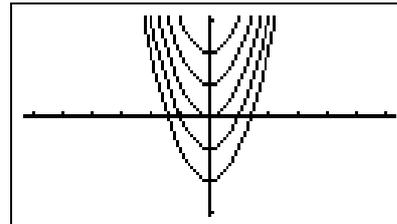
To restrict the domain of a function use the 'square' parentheses [ ].

GRAPHING FUNCTIONS

Sketching Trigonometric Functions

Before sketching a trig function you must decide whether to sketch in *degrees* or *radians*. For the purposes of this example, it is imperative that we sketch in radians.

From the RUN mode enter the SET UP (SHIFT MENU) and check that the Angle setting of the calculator is set to radians. If not, scroll down using the down arrow to Angle, then press Rad (F2).

```
Mode          :Comp
Func Type     :Y=
Draw Type     :Connect
Derivative    :Off
Angle         :Rad
Coord         :On
Grid          :Off      ↓
 Deg  Rad  Gra
```

EXIT the SET UP, press MENU and enter into the GRAPH mode of the calculator (MENU 5). Once in the GRAPH mode, alter the View-Window (SHIFT F3) to the TRIG (F2) setting.

Note that the default trig setting sketches the trig function for {x: -3π ≤ x ≤ 3π}

```
View Window
Xmin :-9.4247779
 max :9.4247796
 scale:1.57079632
Ymin :-1.6
 max :1.6
 scale:0.5
 INIT TRIG STD  STO RCL
```

Press EXIT to return to the text screen. Use the functions available in the GRAPH mode to sketch y = sin x, and find its derivative in the given domain.

To enter the 'd/dx' symbol press OPTN then CALC (F2) (to access the calculus options) followed by F1 (d/dx).
You may wish to draw Y2 in a different colour. If so, press COLR (F4) then choose the colour that you want to use. Orange (F2) is an excellent contrast to blue or green. To draw the two functions press DRAW (F6).

```
Graph Func   :Y=
Y1=sin X
Y2=d/dx(Y1,X)
Y3:
Y4:
Y5:
Y6:
 SEL DEL  TYPE COLR AMEM DRAW
```

To enter the 'Y' symbol press VARS (variables) then GRPH (F4) followed by Y (F1). Notice that the graph of cos x has been drawn against the graph of sin x, exposing the result that the first derivative of sin x w.r.t x is actually cos x.
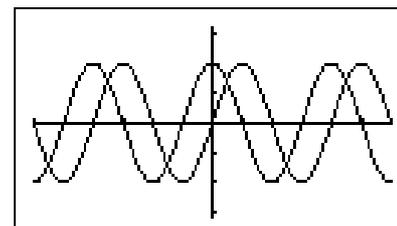
GRAPHING FUNCTIONS

Dynamic Graphing

Enter the DYNA mode of the calculator from the main
menu (MENU 6). Type in the equation Asin X.

```
Dynamic Func:Y=
Y1BAsin X
Y2:
Y3:
Y4:
Y5:
Y6:
SEL DEL TYPE VAR B-IN RCL
```

Dynamic mode will allow us to assign a range of values to this variable, A, and
establish the manner in which the variable effects the function.

Press VAR (F4) then RANG (F2) to select the range of
the variable A. Set the start at –2, End at 2, and pitch as 1
as shown.

```
Y1=Asin X
Dynamic Range
A
Start:-2
End  :2
Pitch:1
```

Press EXIT when you have done this then V-Window
(SHIFT F3) and set your View-Window as it is shown
here.

```
View Window
Xmin :-540
 max  :540
 scale:90
Ymin :-4
 max  :4
 scale:0.5
INIT TRIG STD STO RCL
```

Press EXIT when you have finished then VARS (F4) then DYNA (F6).
The calculator will draw the five graphs Y=-2sinX, Y=-1sinX, Y=0sinX, Y=sinx and
Y=2sinx.

To change the speed, press ⌷ The function keys F1 – F4 are different speeds that
the user may access. By pressing F1 you can control the speed by pressing F1 to go
from one graph to another. (NB the default speed is F3.)

You may now want to try the function Y=sin (AX)

Table Mode

Assume we want a circle to have an area of 30 m², as shown in the diagram opposite. What radius should we make our circle?
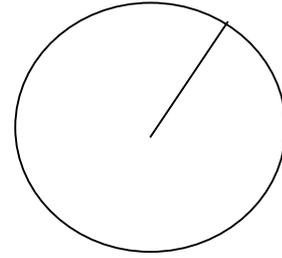
Enter the TABLE mode from the main menu.

Type the equation Y=πX². (NB Press the keys SHIFT EXP X,θ,T X² EXE)
That is, Y stands for Area and X stands for the radius.


```
Table Func   :Y=
Y1=πX²
Y2:
Y3:
Y4:
Y5:
Y6:
[SEL DEL  TYPE COLR RANG TABL
```

Press RANGE (F5) to set the range of X for our table.

Set the range as shown opposite.


```
Table Range
X
 Start:1
 End  :5
 Pitch:0.1
```

Press EXE then TABLE (F6)

Press the ↓ key until Y1 is near 30, that is, the area is 30m².

You will see that x is between 3 and 3.1 for the area to be 30. Highlight X=2.9 and type 3.05 EXE. Refine your guess until the area is very close to 30.


```
   X     Y1
  3.05 29.224
  3    28.274
  3.1  30.19
  3.2  32.169
              3.05
FORM DEL  ROW     G·CON G·PLT
```

STATISTICS

The following data is a set of marks for 7 students out of 40.

35, 20, 24, 28, 26, 22, 24

Enter STAT mode, and then enter the test scores into List 1(type in the number followed by EXE).

List 1	List 2	List 3	List 4
1	35		
2	20		
3	24		
4	28		
5	26		
			35.
GRPH	CALC	TEST	INTR	DIST	▷

Press CALC (F2) then 1VAR (F1) to display the summary statistics. Scroll down the screen using the arrow key to check those statistics not initially displayed.

```
1-Variable
x̄      =25.5714285
Σx     =179
Σx²    =4721
xσn    =4.53107186
xσn-1  =4.89411697
n      =7
1VAR 2VAR REG        SET
```

To convert these test scores to marks out of 100, exit back to the list and move the cursor to the top of List 2 (making sure that List 2 is highlighted). Press the OPTN key followed by List (F1) twice. Enter the operation ' 1 x 2.5 ' and press EXE. The scores in List 2 are now /100.

List 1	List 2	List 3	List 4
1	35		
2	20		
3	24		
4	28		
5	26		

List 1×2.5
| List | L→M | Dim | Fill | Seq | ▷ |

List 1	List 2	List 3	List 4
1	35	87.5		
2	20	50		
3	24	60		
4	28	70		
5	26	65		
				88.
List	L→M	Dim	Fill	Seq	▷

To sort these in ascending or descending order, press EXIT twice to go back to the original options (GRPH, CALC, TEST etc) followed by F6 to look at the other options. Choose F1 orF2, then enter 2 EXE (for two lists), then 1 EXE (for the base list) followed by 2 EXE (for the second list).

List 1	List 2	List 3	List 4
1	35	87.5		
2	20	50		
3	24	60		
4	28	70		
5	26	65		

H?
How Many Lists?(H)

List 1	List 2	List 3	List 4
1	35	87.5		
2	28	70		
3	26	65		
4	24	60		
5	24	60		
				88.
SRT·A	SRT·D	DEL	DEL·A	INS	▷

STATISTICS

Comparing data sets with box and whisker plots

Resting Heart Rate – RHR
Active Heart Rate   – ACR

RHR   67, 69, 72, 68, 74
ACR   82, 85, 98, 80, 97

Enter into the STAT mode, then enter the resting and active heart rates into List1 and List 2 respectively.

Select the GRPH (F1) command followed by SET (F6) to determine the type of graph that you want to select.

To set StatGraph1 scroll down to Graph Type, press the continuation key (F6), followed by F2 to select a Median Box Plot. Scroll back to the top of the screen and press StatGraph2 (F2), then select another Median Box Plot. Importantly, continue to scroll down the screen to XList and select List2 (F2) and change the colour of StatGraph2 if you desire.
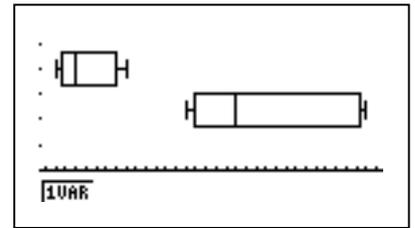
Now, press the EXIT key followed by SEL (F4) to select both graphs drawn at the same time.
(StatGraph1 will be On, scroll down to StatGraph2 and turn On using F1).

Press DRAW (F6) to view the two median box plots simultaneously. Trace the graphs (SHIFT F1) to obtain and record their respective five number statistical summaries.

FINANCIAL MATHEMATICS

Annuities and Loan Repayments

Amortisation describes the process used to calculate the principal to interest portion of an installment (for example monthly), the remaining principal and the amount of principal and interest repaid up to any point to repay a debt.

Defined as: Amortise – gradually extinguish (debt) by money regularly put aside.

OPTIONS AVAILABLE IN F4 – AMORTISATION

BAL   - balance of principal remaining <u>after</u> installment PM2
INT   - interest portion of installment PM1
PRN   - principal portion of installment PM1
ΣINT - total interest from installment PM1 to payment of installment PM2
ΣPRN - total principal from installment PM1 to payment of installment PM2

Loan schedule 1
Initially, consider the repayments required to repay a loan of $200,000.00 at 6.5% p.a, repaid monthly (and compounded monthly) over a 30-year period.

Enter the TVM module from the main menu, then press Compound Interest (F2)
Perform the following key operations from the input screen:
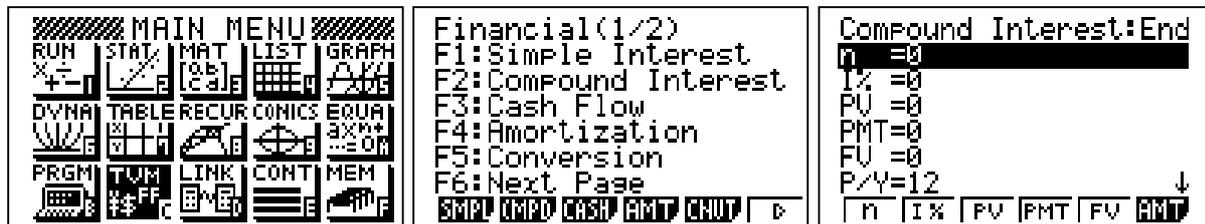
n   = 30 x 12   EXE (360 months)
I%   = 6.5   EXE (6.5% p.a)
PV   = 200 000   EXE (Purchase Value = $200 000)
PMT   = arrow down
FV   = 0   EXE (Future Value = $0)
P/Y   = 12   EXE (Payments per year)
C/Y   = 12   EXE (Compounded monthly)

Press PMT (F4) to evaluate the amount of each payment for the period of the loan.
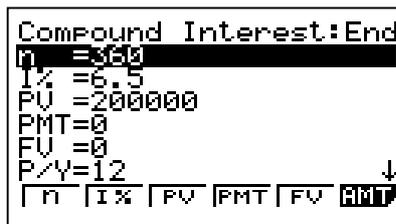
Press AMT (F4) to enter into the Amortisation module.
PM1 = initial installment
PM2 = final installment

We can use PM1 to evaluate the <u>proportion of interest : principal of any repayment</u> for the course of the loan. Additionally, PM2 can be used to isolate any period of the loan to evaluate the <u>proportion of the sum of interest : principal</u>, and show the balance remaining on the loan after the installment PM2.

Make PM1 = 1 and PM2 = 12. This will allow us to consider the following:

For PM1 = 1   the proportion of interest : principal for the first installment of the loan.

For PM2 = 12   the proportion of the sum of interest : principal for the first year of the loan, and the balance remaining on the loan after the first year.

```
Amortization:End
PM1=0
PM2=0
n  =360
I% =6.5
PV =200000
PMT=-1264.136047        ↓
[BAL [INT [PRN [ΣINT [ΣPRN [CMPD]
```

```
Amortization:End
PM1=1
PM2=12
n  =360
I% =6.5
PV =200000
PMT=-1264.136047        ↓
[BAL [INT [PRN [ΣINT [ΣPRN [CMPD]
```

For the $1264.14, the amount of each installment to be made on the loan, identify how much of the first installment is absorbed as interest and how much of the installment goes toward reducing the principal, press INT (F2), REPT (F1), PRN (F3).

```
Amortization:End
INT=-1083.333333




[REPT        [CMPD]    [GRPH]
```

```
Amortization:End
PRN=-180.8027137




[REPT        [CMPD]    [GRPH]
```

To evaluate how much interest and principal is paid off the loan in the first year, and the balance remaining on the loan at the end of the first year press ΣINT (F4), REPT (F1), ΣPRN (F5), REPT (F1) then BAL (F1)

```
Amortization:End
ΣIN=-12934.18163




[REPT        [CMPD]    [GRPH]
```

```
Amortization:End
ΣPR=-2235.450938




[REPT        [CMPD]    [GRPH]
```

```
Amortization:End
BAL=197764.5491




[REPT        [CMPD]    [GRPH]
```

After establishing the balance remaining after the first year, press GRPH (F6) to view the cash flow graph and press TRACE (SHIFT F1).

Loan Schedule 2

Let's assume that we can afford to pay off more than the minimum amount of $1264.14 each month. Assume that we can afford to pay $2000.00 per month.

Return to the initial Compound Interest Screen and change the payment to PMT= -2000, which is $2000.00 per month. Now press n (F1) (number of months).

```
Compound Interest:End     Compound Interest:End     Compound Interest:End
n  =360                   n  =360                   n  =144.4190002
I% =6.5                   I% =6.5
PV =200000                PV =200000
PMT=-1264.136047          PMT=-2000
FV =0                     FV =0
P/Y=12            ↓       P/Y=12            ↓
 n  I%  PV PMT FV AMT      n  I%  PV PMT FV AMT     REPT        AMT     GRPH
```

Now, continue to the Amortisation module and perform identical operations as per **Loan Schedule 1** and complete the following table.

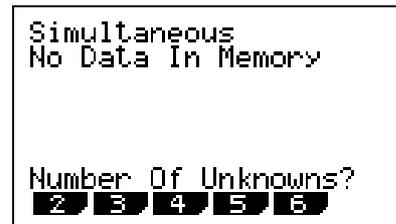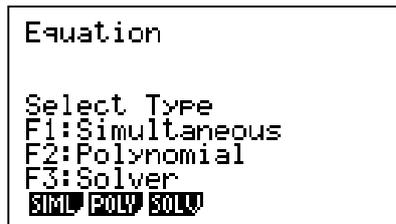| (installment 1 / year1)	Loan Schedule 1	Loan Schedule 2
PMT	1264.14	
INT		
PRN		
ΣINT		
ΣPRN		
BAL		
Trace cash flow curve	Interest / Principal	Interest / Principal
N = 13		
N = 25		
N = 61		
N = 121		
N = 144		

N.B: Notice that   PMT = INT + PRN
                     200,000 = ΣPRN + BAL

SOLVING LINEAR AND NON-LINEAR EQUATIONS

The calculator is able to provide numerical approximations to solutions, but cannot give *exact* results where the solutions are irrational.

SIMULTANEOUS EQUATIONS

Press MENU A to enter EQUA mode then press F1 to select simultaneous equations.

```
Equation


Select Type
F1:Simultaneous
F2:Polynomial
F3:Solver
SIML POLY SOLV
```

```
Simultaneous
No Data In Memory




Number Of Unknowns?
 2   3   4   5   6
```
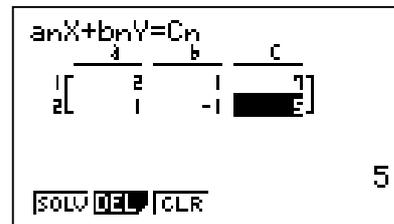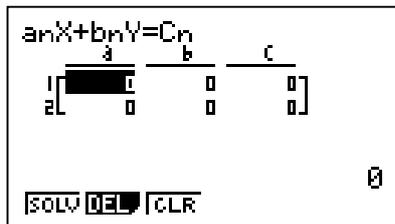
Systems of equations with up to six unknowns can be solved using this feature.
Initially lets consider a relatively simple 2 x 2 system.

$$2A + B = 7$$
$$A - B = 5$$

Enter into the calculator the coefficients of the variables by first selecting the number of unknowns i.e. two (F1) then entering the respective coefficients followed by EXE. Notice that the coefficients are entered in rows not columns.

```
anX+bnY=Cn
     a     b     c
 1[   0     0     0]
 2[   0     0     0]



                    0
SOLV DEL CLR
```

```
anX+bnY=Cn
     a     b     c
 1[   2     1     7]
 2[   1    -1     5]



                    5
SOLV DEL CLR
```

To solve this simultaneous equation press SOLV (F1), and it presents the point of intersection of the two linear functions.

```
anX+bnY=Cn

 X[    4]
 Y[   -1]



                    4
REPT
```
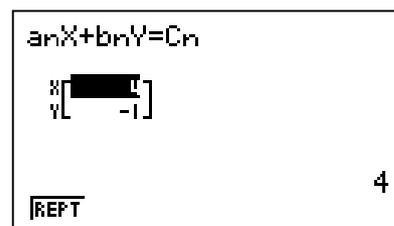
POLYNOMIAL EQUATIONS

After selecting EQUA press Polynomial (F2) so that we may find the solution(s) to either a quadratic or cubic polynomial, (the degree of the polynomial is the power of the leading term in the polynomial).
A quadratic polynomial has a degree of two; a cubic polynomial has a degree of three; a quartic four and so on.

Consider the solutions to the following two polynomials.

$$x^2 + 3x + 2 = 0 \quad \text{…..(1)}$$

$$2x^3 + x^2 = 1 + 2x \quad \text{….(2)}$$

To solve equation 1 press F1 (to select a polynomial of degree 2). Then enter in the appropriate coefficients into the calculator. Following this press SOLV (F1) to present the obvious solutions x = -1 and –2.
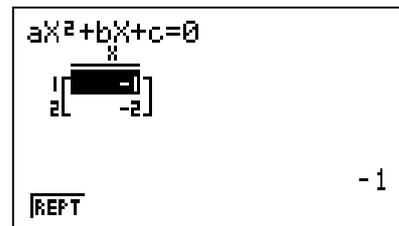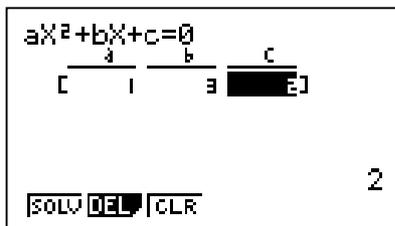
To solve equation 2 EXIT back to the initial Polynomial screen and select F2 (for a cubic polynomial).

Now, before we can solve this polynomial we must first rearrange the polynomial into an appropriate format i.e. $2x^3 + x^2 – 2x – 1 = 0$. Now enter the coefficients into the calculator as done previously to obtain the solutions x=-1, -0.5, 1.
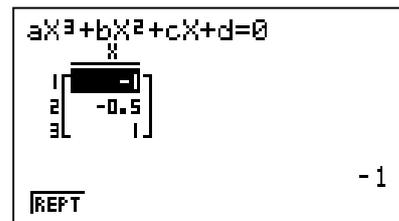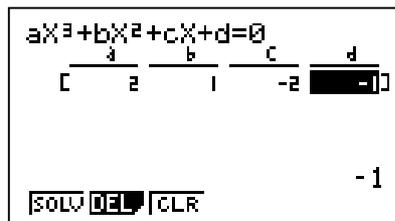
It is possible to find the solutions to polynomials with imaginary solutions, such as $X^2+2=0$ or $x^3+x=0$. Remember that $i^2=-1$.

EQUATION SOLVER

Given that V=U+AT and U=0, V=50 and A=10 find T.

Enter EQUA from the main menu then Solver (F3).

Type in the equation V = U + AT.

```
Eq:U=U+AT
 U=0
 U=0
 A=0
 T=0


RCL DEL           SOLV
```

<u>NB:</u> To type letters press the ALPHA key then the key with the appropriate red letter on top of it. The equals sign is accessed by pressing SHIFT •.

Enter the appropriate value for each variable, highlight T and press SOLV (F1).

```
Eq:U=U+AT
 U=50
 U=0
 A=10
 T=0


RCL DEL           SOLV
```

```
Eq:U=U+AT
  T=5
 Lft=50
 Rgt=50



REPT
```

Days Calculation

How old are you?

Enter the TVM mode then press the continuation key (F6) and Days Calculation (F2)

For d1, enter the date you were born. It must be entered as follows 'month.dateyear'. <u>Eg:</u> If you were born on the 7th of June 1967, you would enter 6.071967

For d2, enter today's date.

Press PRD (F1) to find out how many days you have been alive.

```
Days Calculation:365
d1 =6.071967
d2 =2.252000
D  =1


PRD d1+D d1-D
```

```
Days Calculation:365
Prd=11951




REPT
```

Troubleshooting

Problem: No graph is coming up on my screen in the graph or dynamic mode.
Solution: Press SHIFT F3 then F1 then EXE. Draw the graph. Press SHIFT F2 then choose F4 until you can see the graph. Alternatively, press SHIFT F2 then F5.

Problem: No graph is coming up on my screen in the statistics mode
Solution: Press SHIFT MENU then F1 for Auto then EXE.

Problem: I am entering a trigonometry operation and I'm getting the wrong answer.
Solution: Press SHIFT MENU and check the Angle units are correct. To change them, highlight Angle then press the appropriate Function key then EXE.

Problem: My graph is drawing but there are no axes.
Solution: Press SHIFT MENU then go down to Axes then press F1 and EXE.

Problem: When I type my function in to graph it comes up Syn Error.
Solution: You have used the wrong syntax somewhere. It may be the wrong X key, that is, you may have used the times key accidentally. It may also have been you used the change of sign key (-) instead of the minus key.

Problem: I can't get rid of an error message.
Solution: Press AC

Problem: When I use G-Solv, it won't give me an answer.
Solution: If a solution isn't on showing on the screen, G-Solv will not find it. Press SIFT F2 then F4 until the answer should be on the screen then use G-Solv. If it gives one answer, press the right arrow key to move to the next answer.

Problem: When I try to find the statistics it comes up Dim Error.
Solution: First press AC then F2 and F6 (Set). Make sure 1Var Xlist is List 1 and 1Var Xlist is 1. Press EXE then F1 (1Var).

Problem: When I try to draw a graph it comes up Dim Error.
Solution: This means the calculator is looking for data where there isn't any. Check how you set up the graphs again. Press AC to get rid of the Error message.

Problem: When I try to do something like List 1÷100 it comes up Ma Error.
Solution: It means you have not highlighted the name of the list you want to fill. Or you may be trying to do something impossible mathematically like divide by zero.

Problem: When I'm in equation solver mode, it will only give me one answer.
Solution: In this mode, the calculator will only ever give one solution, the closest value to the initial value. Try a different initial value for your unknown.

Problem: When I'm doing a compound interest question in the finance mode I am not getting the correct answer.
Solution: Check that you have the correct sign in front of PV, PMT and FV. Remember it could be positive or negative.