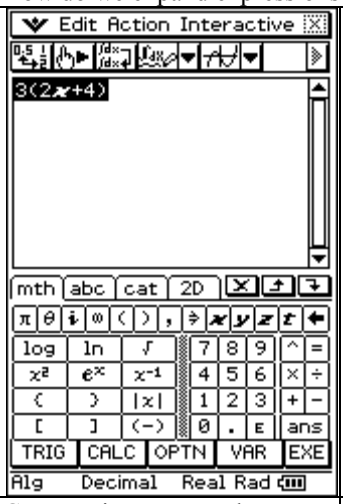
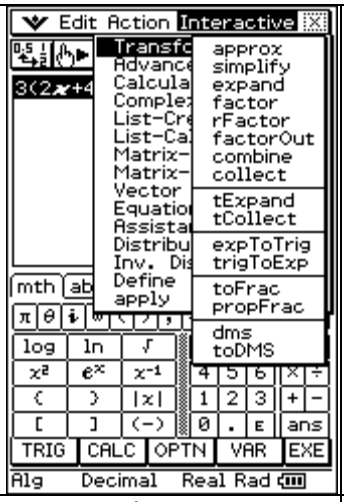
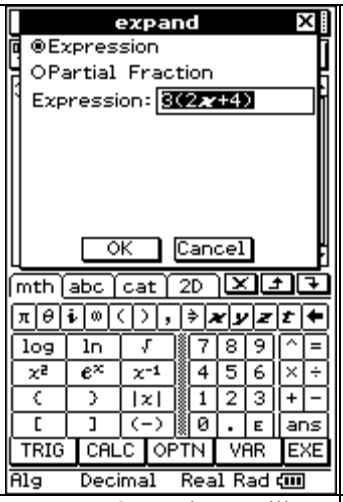
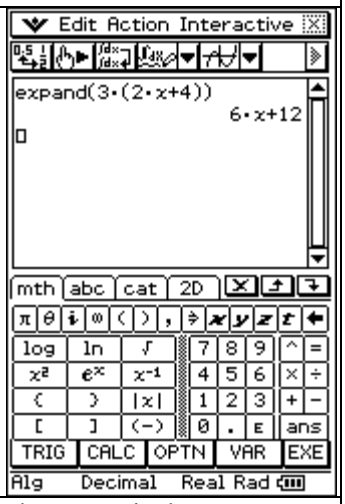
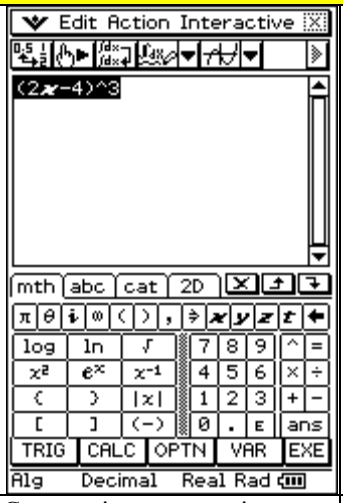
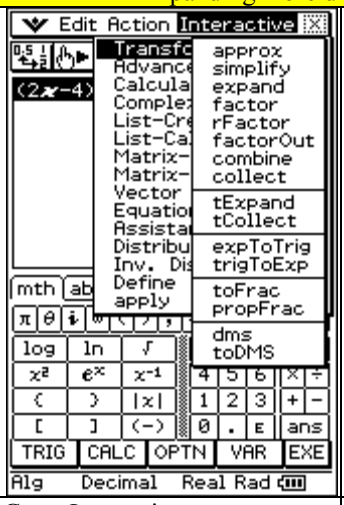
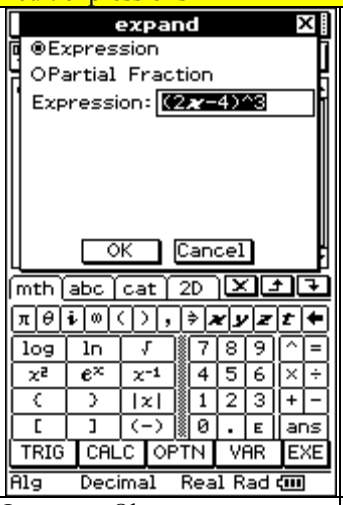
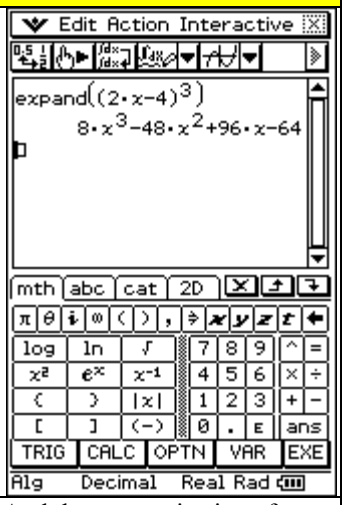
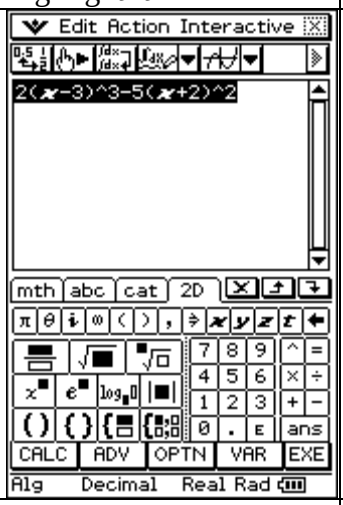
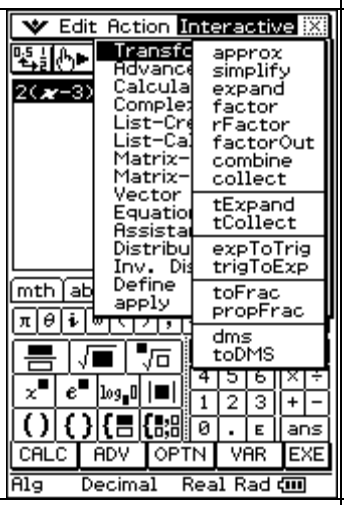
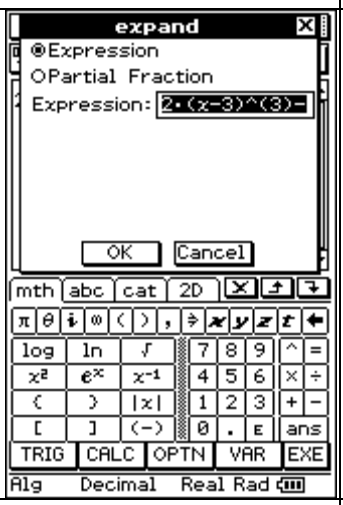
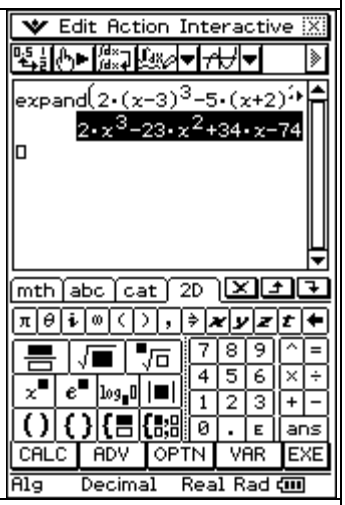
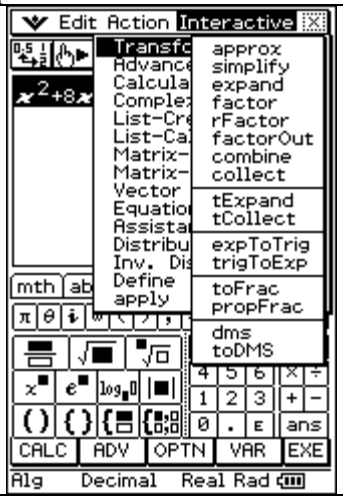
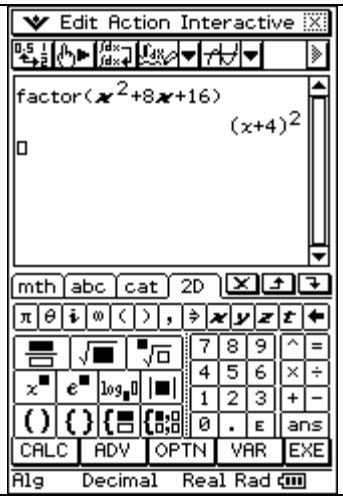
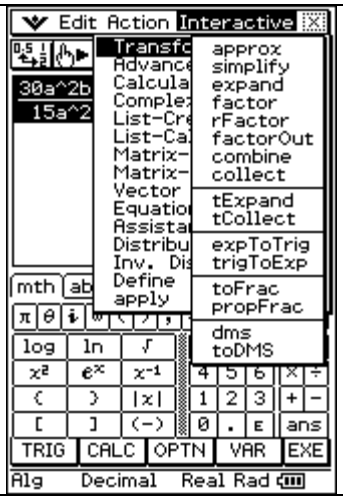
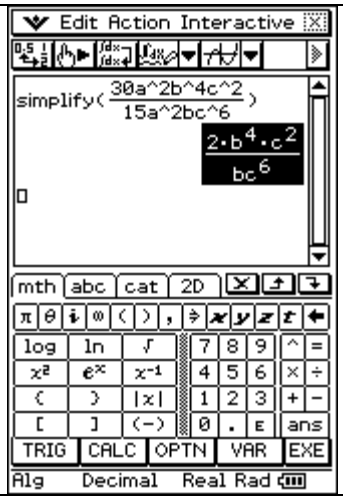
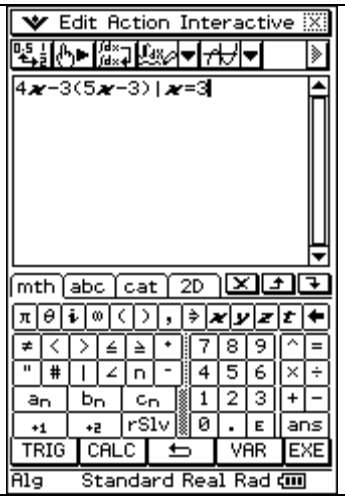
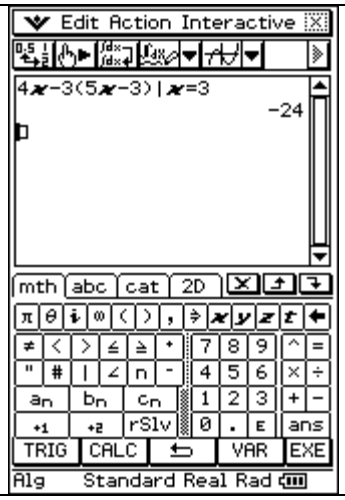
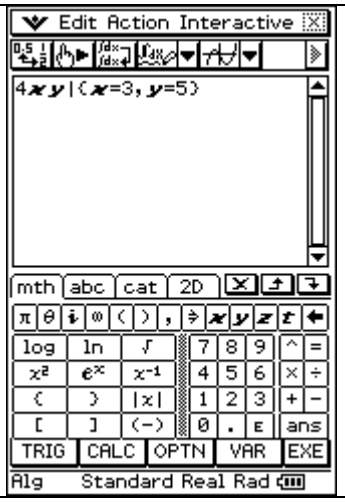
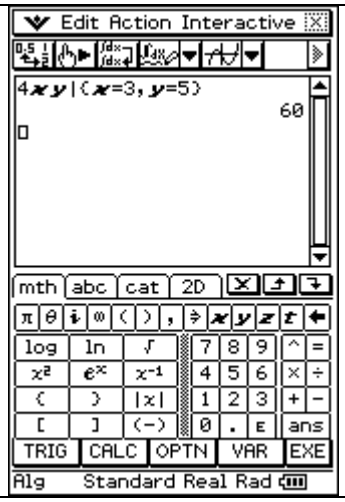
Algebra-Classpad-Examples

<table>
<tr><td colspan="4">Simplifying Algebraic expressions</td></tr>
<tr><td colspan="4">How do we simplify algebraic expressions</td></tr>
<tr><td> 
</td><td> 
</td><td></td><td></td></tr>
<tr><td>Go to Main and enter the screen
And enter the algebraic expression
$x+4x-7y-12y$
Press EXE</td><td>And you get the answer</td><td></td><td></td></tr>
<tr><td colspan="4">Expanding expressions</td></tr>
<tr><td colspan="4">How do we expand expressions</td></tr>
<tr><td> 
</td><td> 
</td><td> 
</td><td> 
</td></tr>
<tr><td>Go to main screen and enter
$3(2x+4)$
Highlight it</td><td>Tap Interactive
Transformation
Expand</td><td>Just press OK and you will get the answer</td><td>The answer is shown</td></tr>
</table>

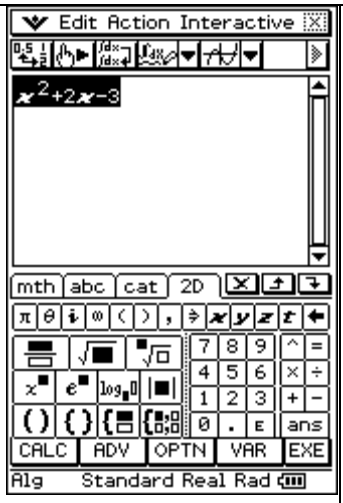
Expanding more difficult expressions			
			
Go to main screen again Enter the following expression $(2x-4)^3$ Highlight it	Go to Interactive Transformation Expand again	Just press Ok	And the answer is given for us once again
			
This time lets repeat it using a more complicated expression Go to Main and enter the following $2(x-3)^3-5(x+2)^2$ Highlight it once again	Tap Interactive Transformation Expand	Press OK	And the answer is worked out for you.

Factorizing			
How do we factorize algebraic expressions?			
			
Go to main screen again and enter the following $x^2+8x+16$ Highlight it	Go to Interactive Transformation factor	And the answer is shown for us	
Simplifying algebraic fractions			
How do we simplify algebraic fractions			
			
Go to main screen and enter $\frac{30a^3b^4c^2}{15a^2bc^6}$ You will need to use 2D and fraction template Highlight it	Tap Interactive Transformation Simplify	And the answer is given. I have highlighted the answer	

Evaluate expressions			
How do we evaluate expressions such as $4x-3(5x-3)$ for $x=3$			
			
Enter the expression in the main section Go to OPTN and enter |	Press EXE		
More evaluation expressions			
What about expressions such as $4xy$ for $x=3$ and $y=5$			
			
Enter the expression again in main section The go to OPTN and tap Enter brackets and put values of x and y			

How do we calculate a composite function?

For example let's say that $g(x)=x^2+2x-3$ and $f(x)=e^{2x+4}$. Find $f(g(x))$

<table>
<tr>
<td> 
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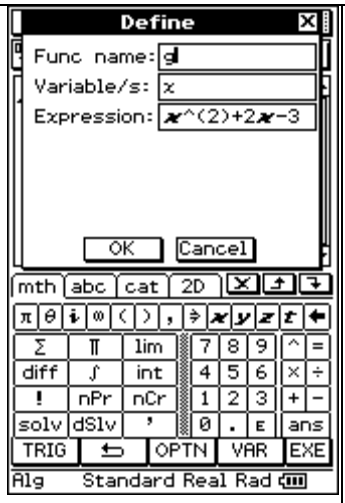
<td> 
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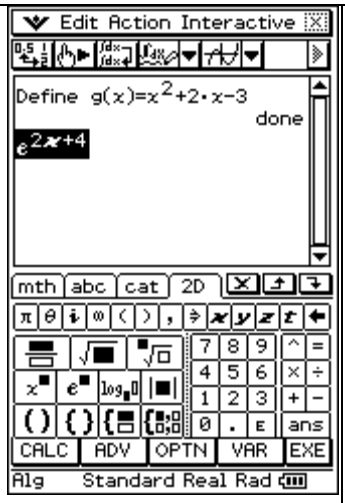
<td> 
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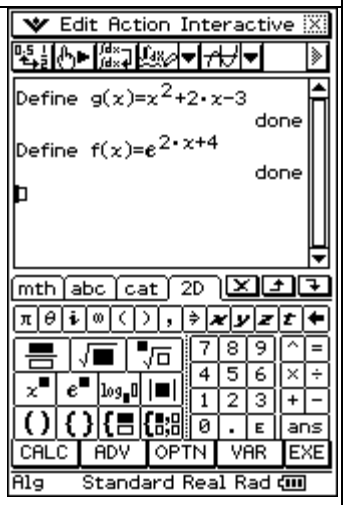
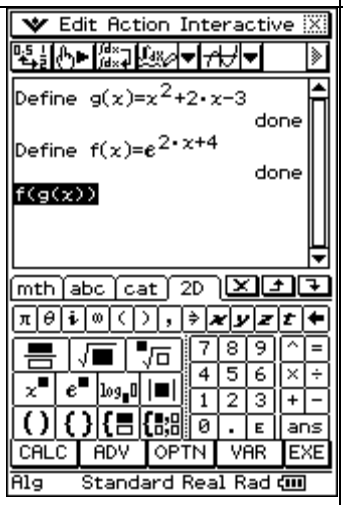
<td> 
</td>
</tr>
<tr>
<td>First enter the equation of f(x) into the main section and highlight it</td>
<td>Press interactive
Then define-call it g(x)
Press OK</td>
<td>This is what we see when we press OK, now repeat it for f(x)
Enter the equation- and highlight it</td>
<td>Go to interactive
Define
Call it f(x)</td>
</tr>
<tr>
<td> 
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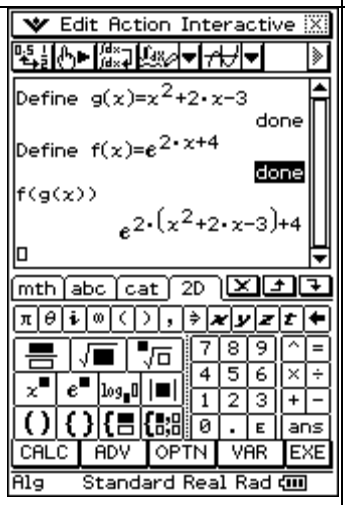
<td> 
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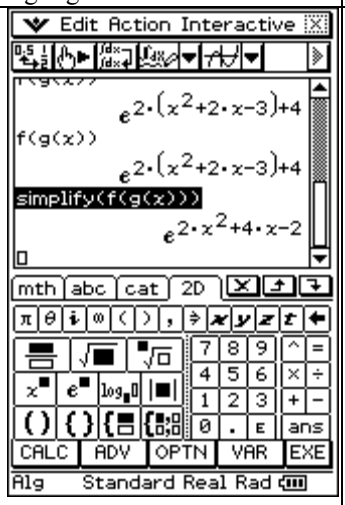
<td> 
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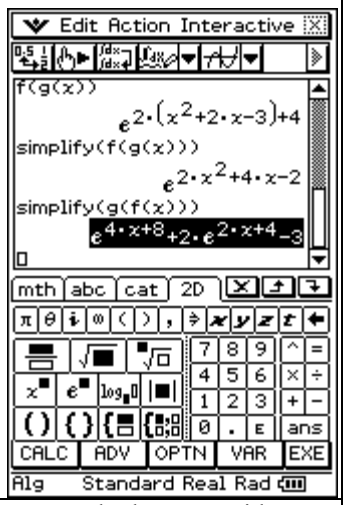
<td> 
</td>
</tr>
<tr>
<td>Now we enter the function we need to work out</td>
<td>And the answer is on the screen above
But we can use the power of the calculator to simplify the answer</td>
<td>We can use the power of the calculator to simplify our answers by
Highlight it
Interactive
Transformation
Simplify</td>
<td>We can do the same with $g(f(x))$
So we enter the equation and then go
Interactive
Transformation
Simplify
And we get the highlighted answer</td>
</tr>
<tr><td></td><td></td><td></td><td></td></tr>
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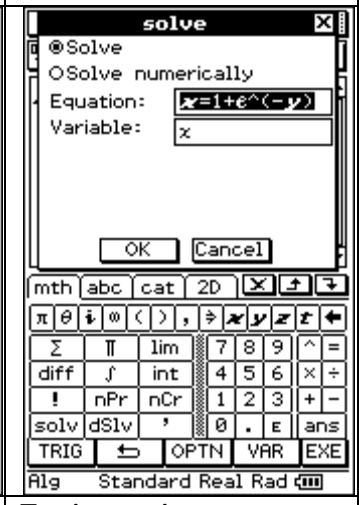
</table>

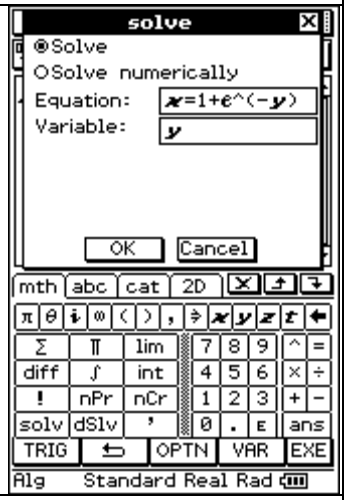
Finding the inverse function

For the function $h(x)=1+e^{-x}$, find the inverse function $h^{-1}(x)$

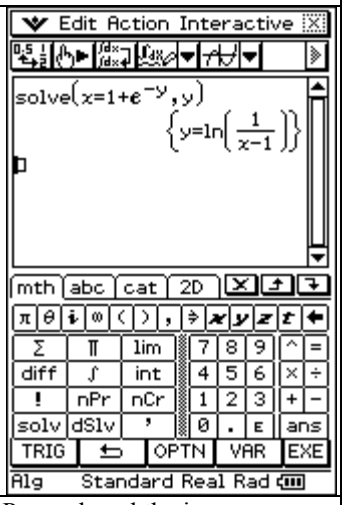
Put $x=1+e^{-y}$ and then select this input



Tap interactive
Then equation
Then solve



In the variable replace it with y instead

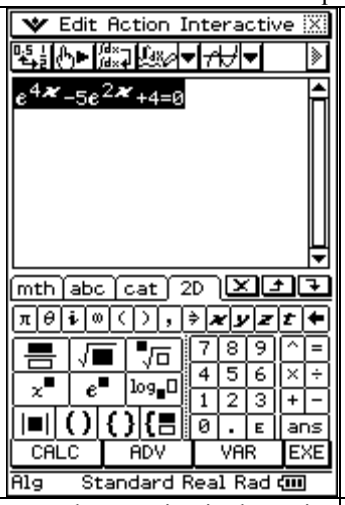


Press ok and the inverse function is calculated

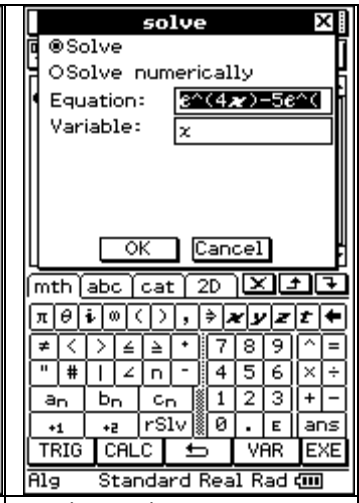
Solving equations exactly

Solving equations- exact

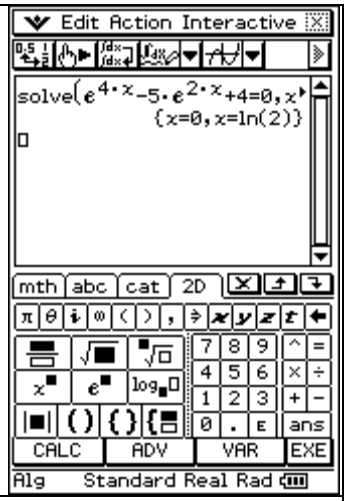
Find the solution set for the equation $e^{4x}-5e^{2x}+4=0$



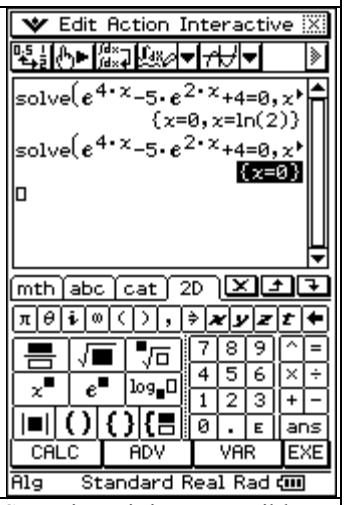
Enter the equation in the main application screen. And then highlight it



Tap interactive
Equation
Solve



Make sure Solve is selected as this will give us exact values

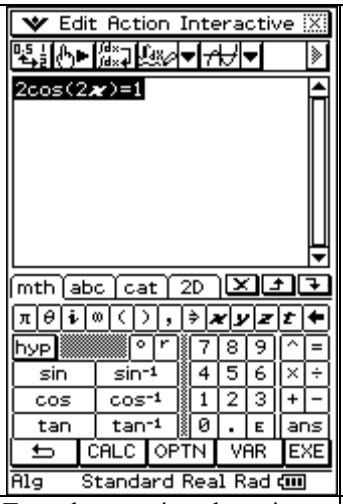


Sometimes it is not possible to get exact answers to all questions, so it would be better to select solve numerically.
Notice we do not obtain all the solutions!

Solving equations exactly- within a given domain

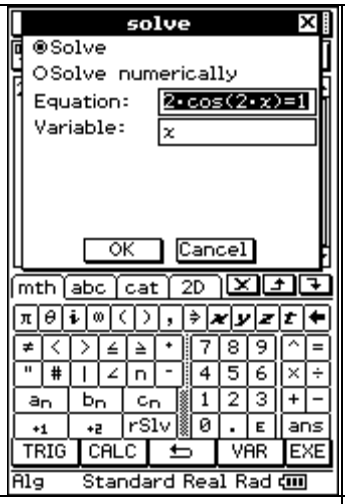
Solving equations , exactly
Find the exact values for the solutions to equations within a given domain.

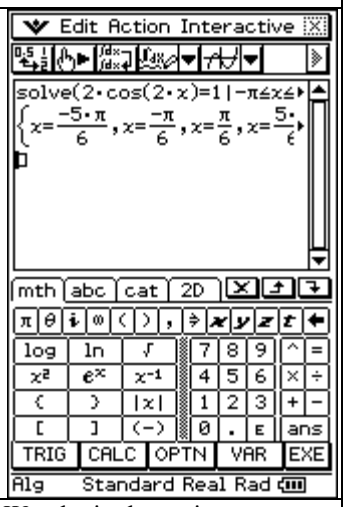
Find the exact values of $x \in (-\pi, \pi)$ such that $2\cos(2x) = 1$



Type the equation above into the main section of the calculator

Go to OPTN and enter the domain
Then press interactive
Equation
Solve



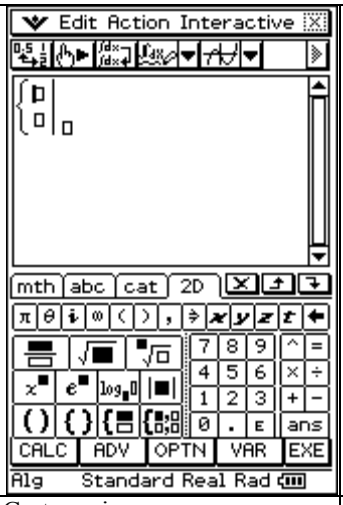


We obtain the various solution for our question

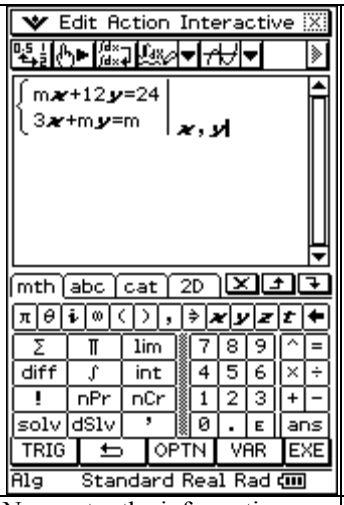
Simultaneous Equations

How do we find the solution to simultaneous equations?

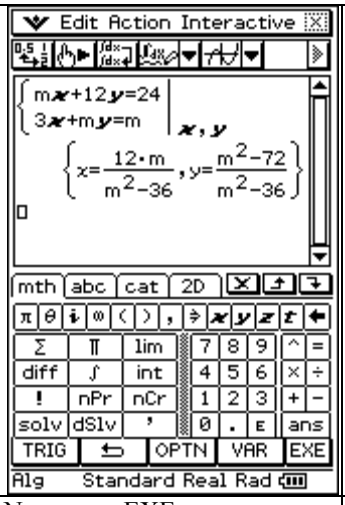
Find the solution to the following equations $\begin{aligned} mx + 12y &= 24 \\ 3x + my &= m \end{aligned}$



Go to main area
Go to 2D and select the appropriate template



Now enter the information from the equations above.
Be careful of order x and y in the equations.

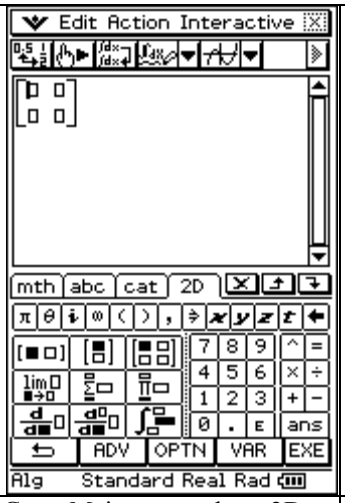


Now press EXE
And we have solved the simultaneous equations.

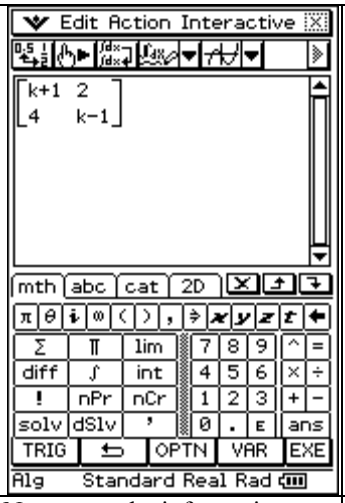
Equations and Matrices

Determining when a system of equations has a unique solution

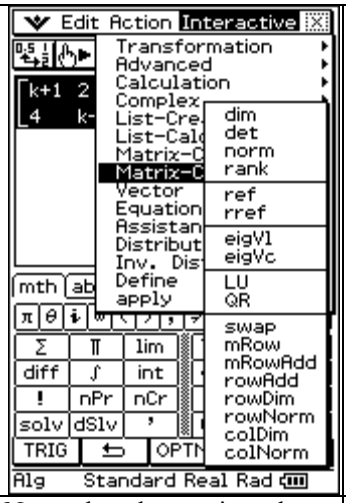
Consider the linear equations given by the following: $\begin{bmatrix} k+1 & 2 \\ 4 & k-1 \end{bmatrix}\begin{bmatrix} x \\ y \end{bmatrix}=\begin{bmatrix} 0 \\ k \end{bmatrix}$, find value of k for a unique solution



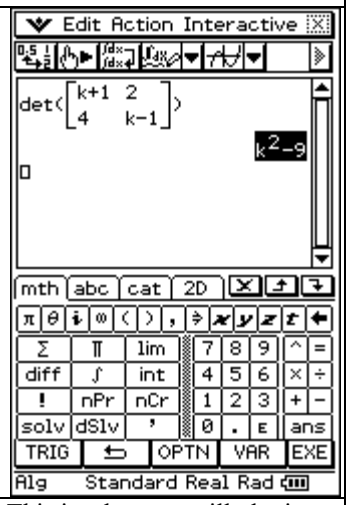
Go to Main area and use 2D and use Matrix template



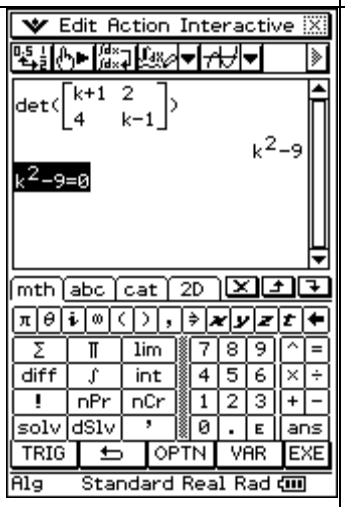
Now enter the information carefully.
Remember to use abc keys



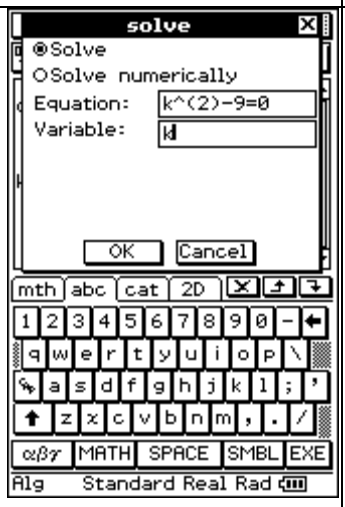
Now select the matrix and
Go interactive
Matrix-calculation
det



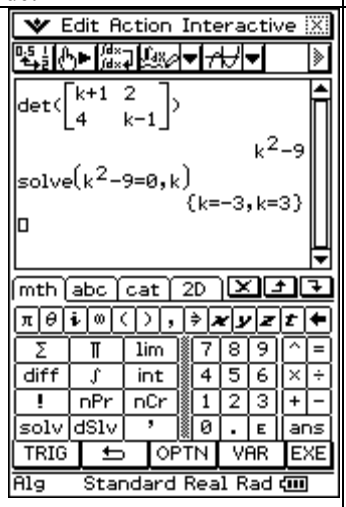
This is what you will obtain



Select the expression for the determinant and put it onto a new line and set to zero and solve



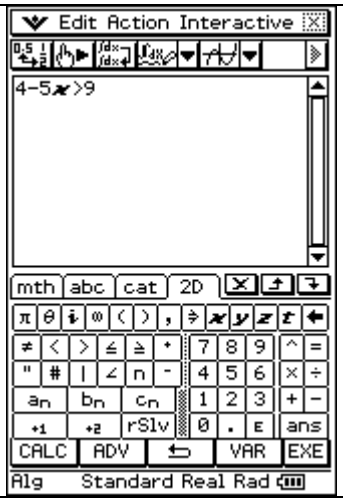
Highlight it
Interactive
Equation
Solve
Remember to put k for variable



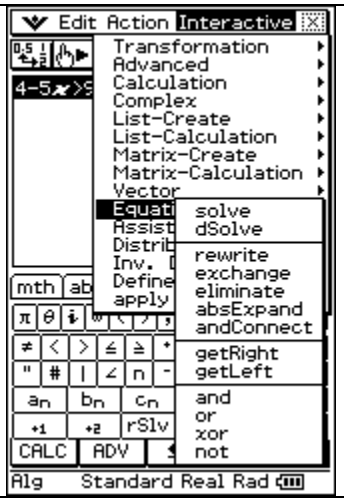
And we get the answers.
This tells us when the system of equation does not have a unique solution.
For all other values of k it will have a unique solution

Solving linear inequalities

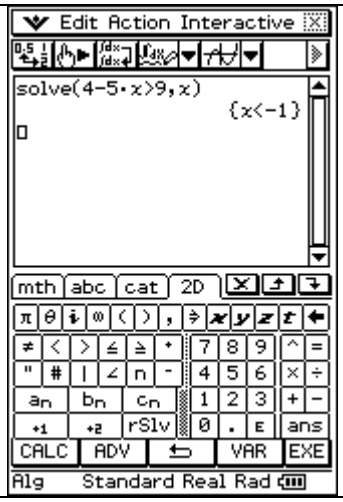
How do we solve linear inequalities such as $4-5x>9$



Once again enter the information into the calculator



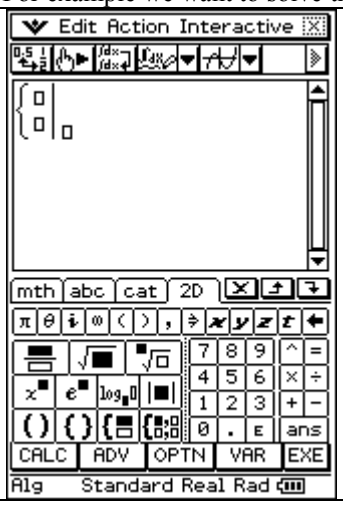
Go to interactive
Equation
Solve



And the solution is provided for us.

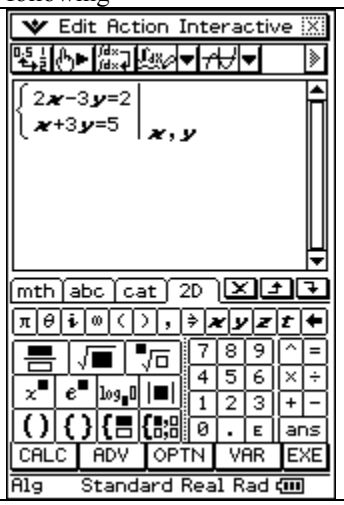
Solving simultaneous linear equations -2

How do we solve simultaneous equations using the classpad
For example we want to solve the following



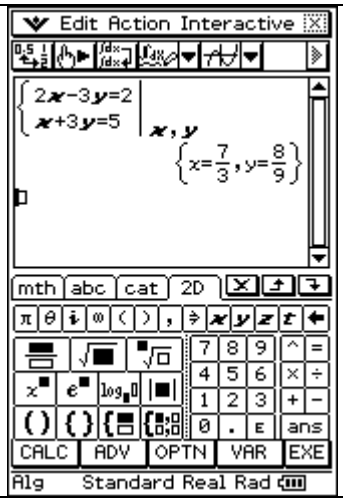
Go to main screen
Then go to 2D and use the template and you will see the above

If it 3 equation tap on it and it will have three fields to put information in



Then imput the information

Put the information in carefully and then type in EXE



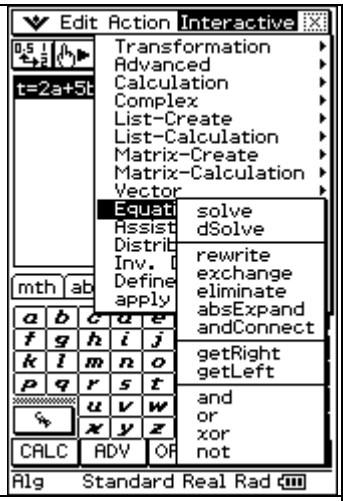
And the answer is given for us

Rearranging equations

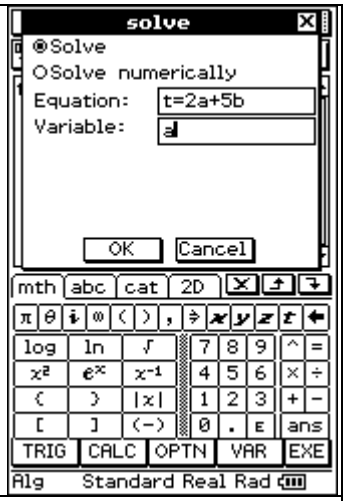
We want to rearrange the following equation

Make a the subject in the equation $t = 2a + 5b$

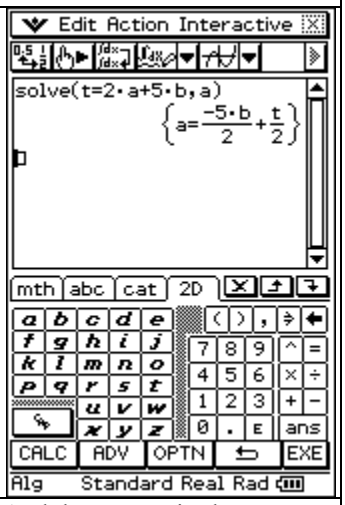
Type the equation into the main section



Interactive
Equation
Solve



Make sure the variable is a



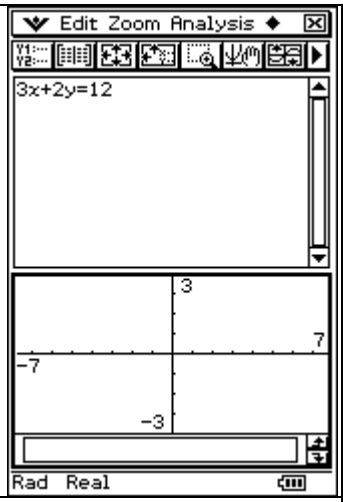
And the answer is above

Graphing

Many ways to graph using the classpad but let us use one method.

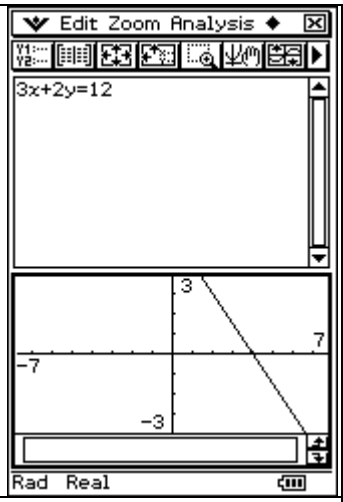
We want to graph the graph of $3x + 2y = 12$

Firstly type the equation in the main window

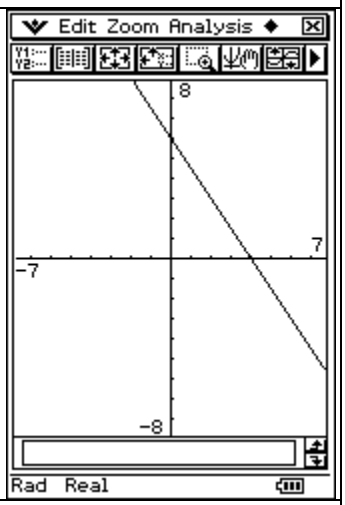


Now press the graph button

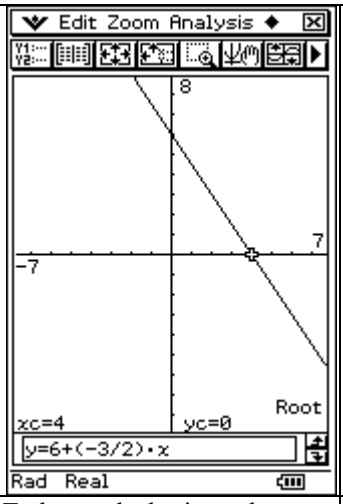
And you will see the following



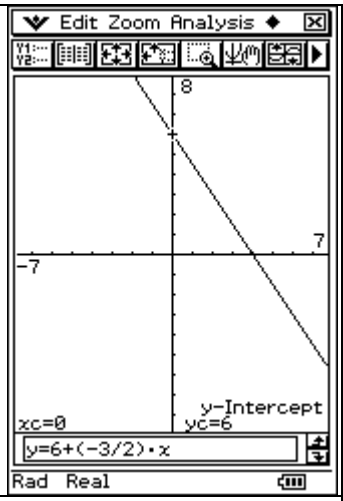
Now drag the highlight equation into the window below



Resize the bottom window to see the graph better



To locate the horizontal intercept
Tap Analysis
G-Solve
Root
Notice the answer is x =4



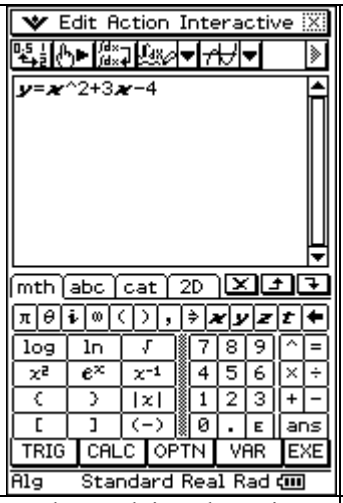
To locate the vertical intercept
Tap- Analysis
G-Solve
y-intercept

Notice answer is y - 6

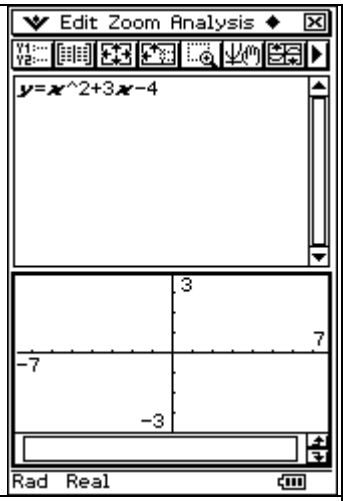
Graphing Parabola Features

Lets us plot a parabola and analyse some of its features

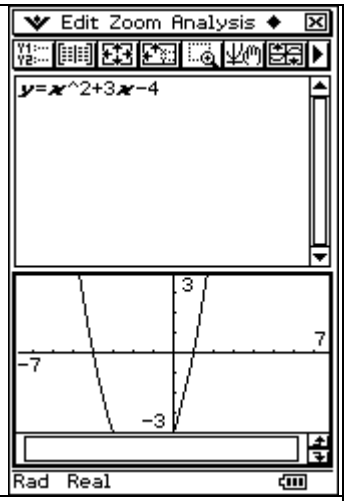
The graph of $y = x^2 + 3x - 4$



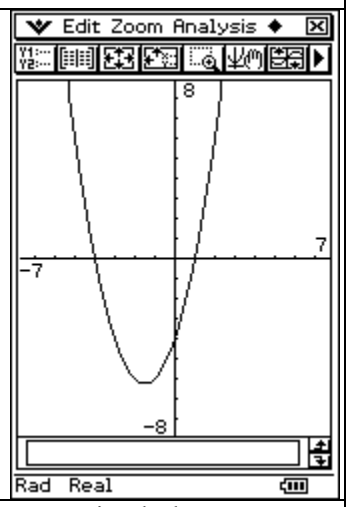
Put the graph into the main screen quickly



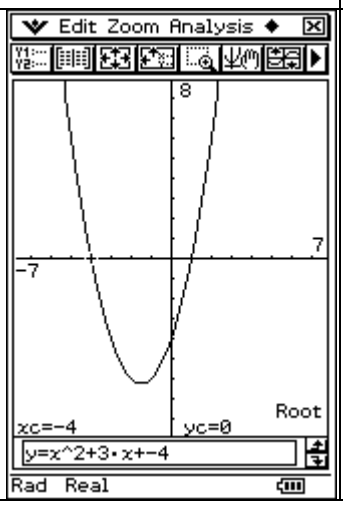
Tap the graph button

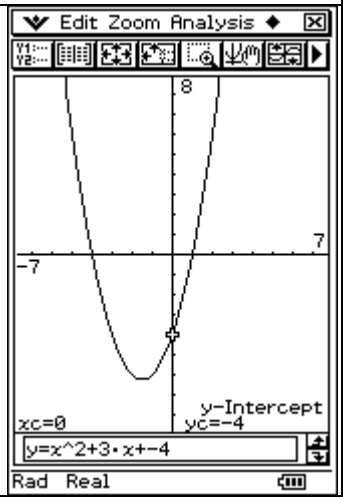


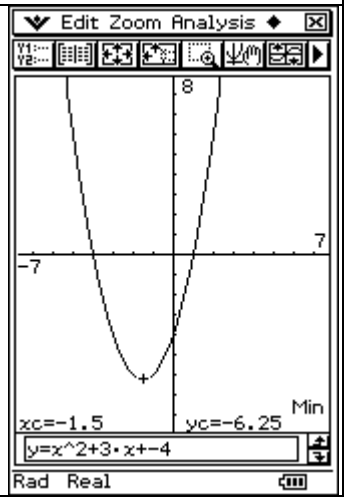
Highlight the graph and drag it into the sceen below



Now resize the bottom screen to see the graph better



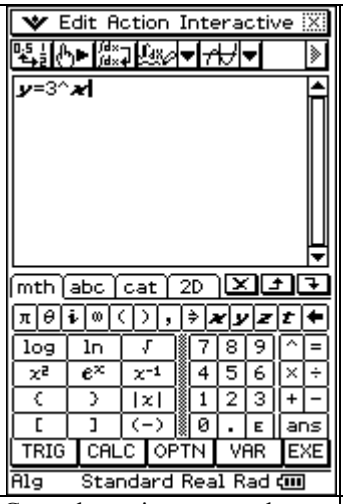
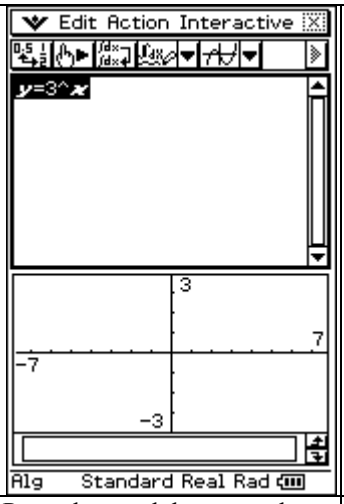
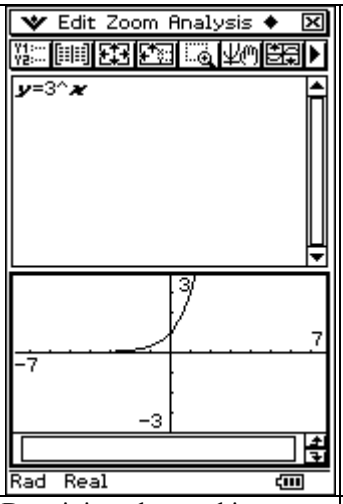
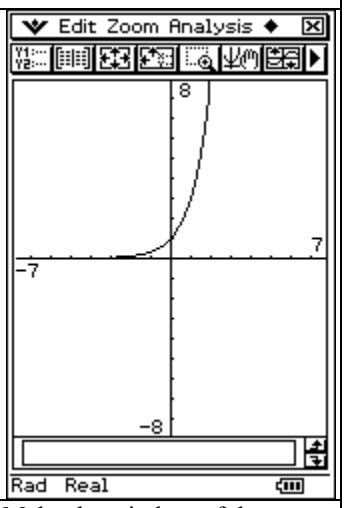
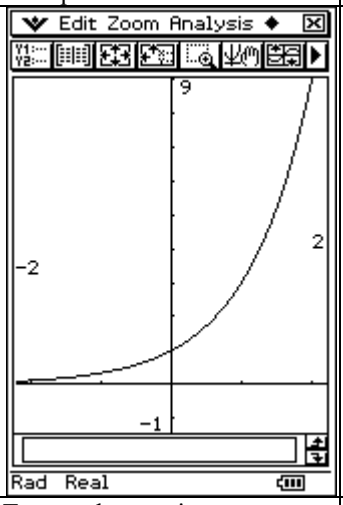
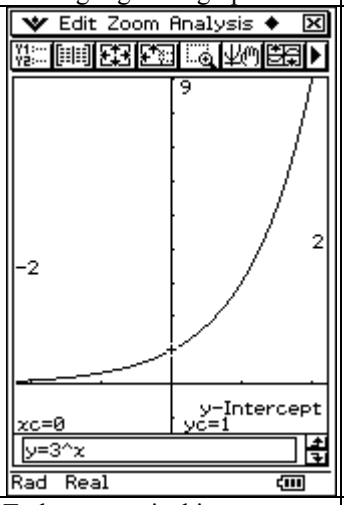




Horizontal intercepts Tap- Analysis G-Solve Root Use left and right cursor to move to each intercept	Vertical intercept Go Analysis G-Solve y-intercept	Vertex Go Analysis G-Solve Min	

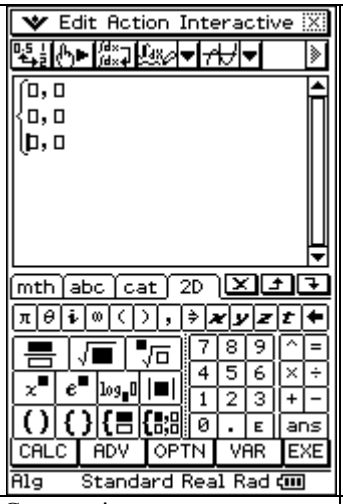
Graph of an Exponential function

How do we graph exponential $y = 3^x$

			
Go to the main menu and type the equation out as follows	Press the graph button and then highlight the graph	Drag it into the graphing window	Make the window of the bottom screen bigger
			
To get a better picture Go to Zoom Quick $e^{\wedge}x$	To locate vertical intercept Tap- Analysis G-Solve y-Intercept		

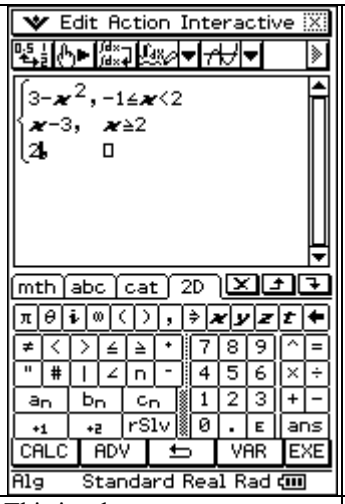
Piecewise Defined functions

Imagine we want to do piecewise defined function such as the following: $f(x)=\begin{cases}3-x^2 & -1\le x\le 2\\ x-3 & x>2\\ 2 & elsewhere\end{cases}$



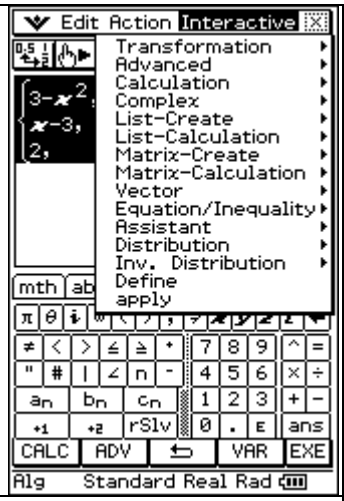
Go to main screen
Go to 2D tab

Tap twice on the 
You will create three empty rows

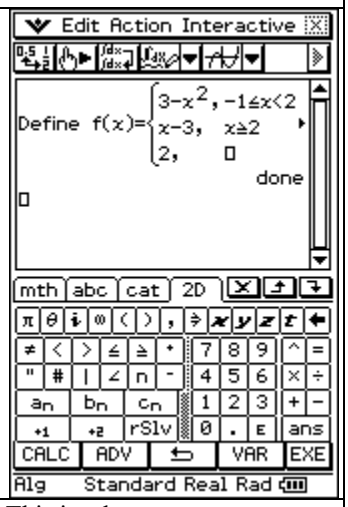


This is what we see

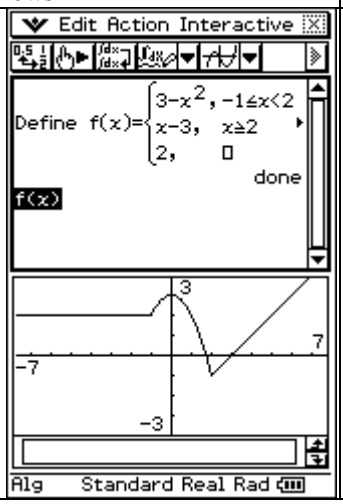
Now highlight it

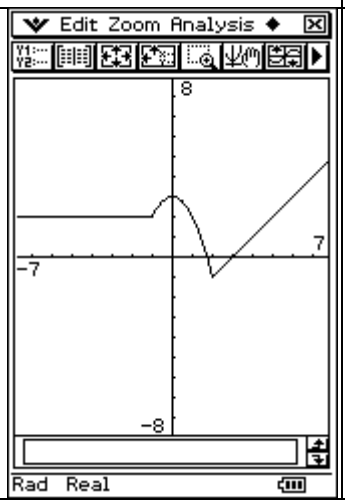


Now we can define it
Highlight it
Interactive
Define
Call it f



This is what we see now we can press the graph button



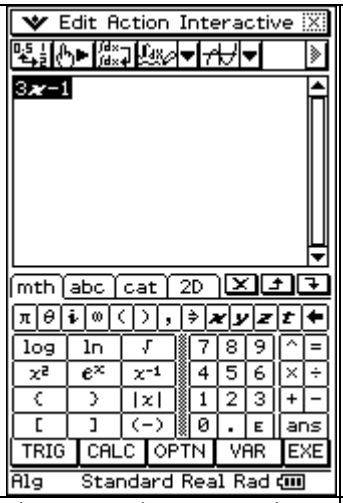


Composite Functions

How to we do composite functions and graph them

$f(x)=3x-1$ and the $g(x)=x^2-4x+6$

Find $f\left(g(x)\right)$ and graph it

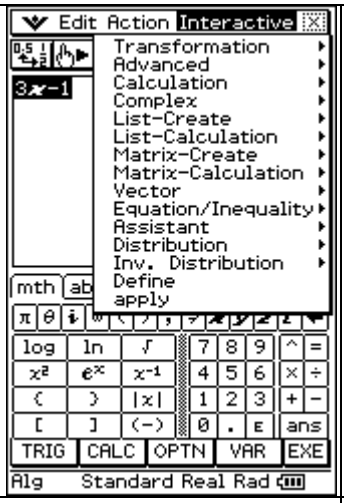


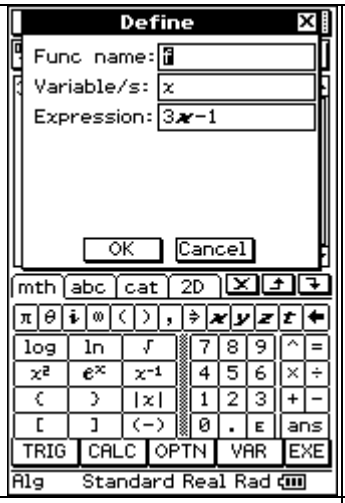
First we need to go to main section and type in the equation and define it

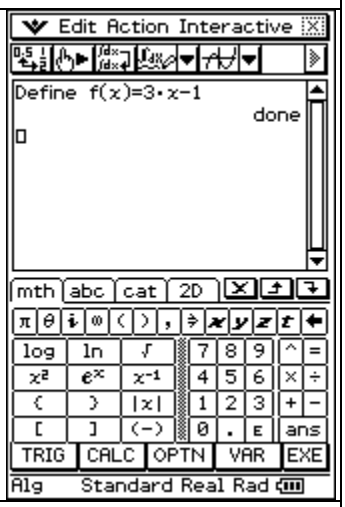
We do that one at a time

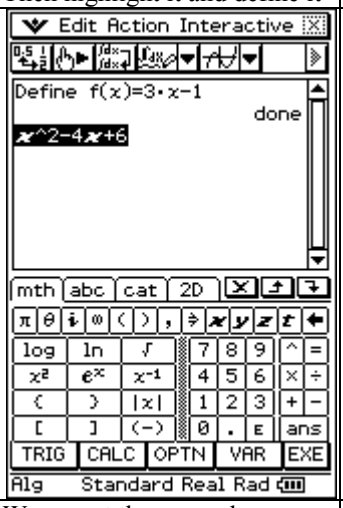
Type- $3x-1$

Then highlight it and define it



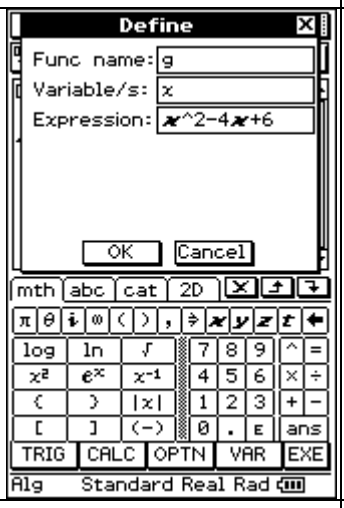


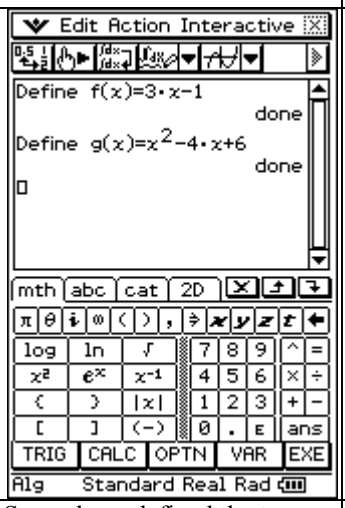




We repeat the same above process for the other equation

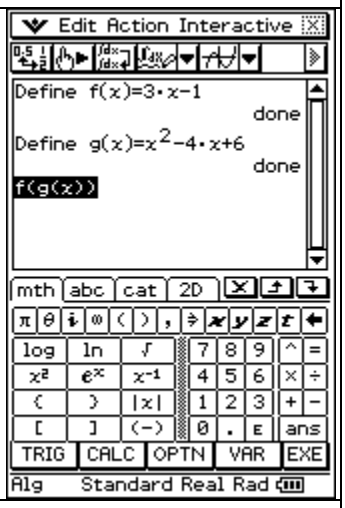
x^2-4x+6

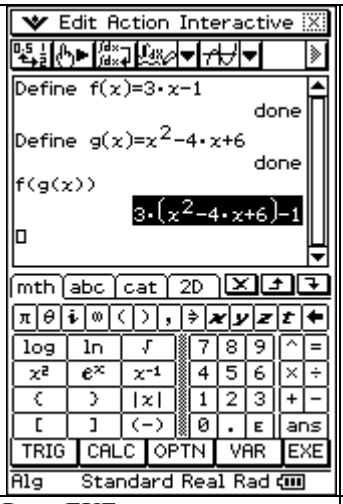
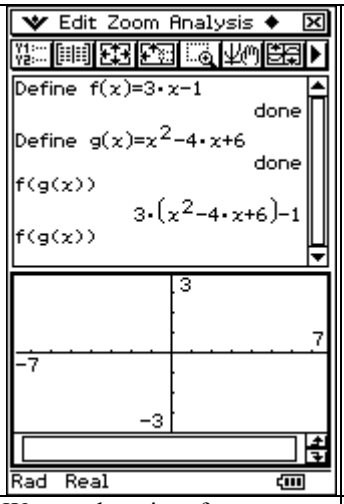
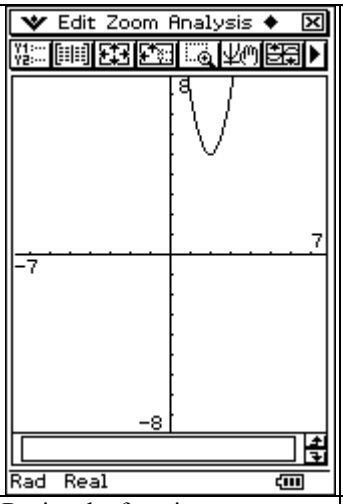
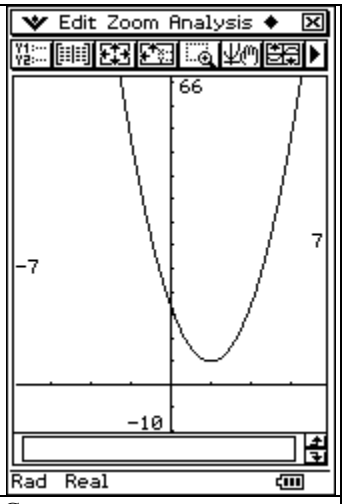
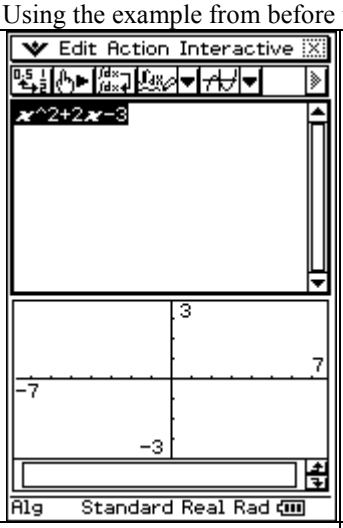
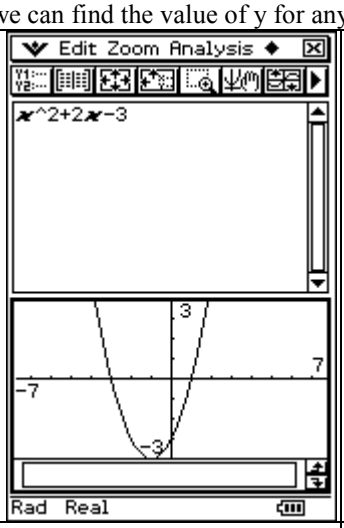
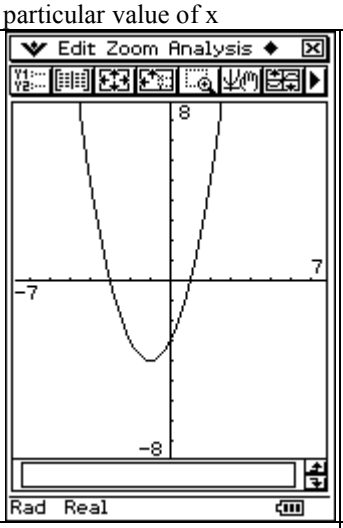
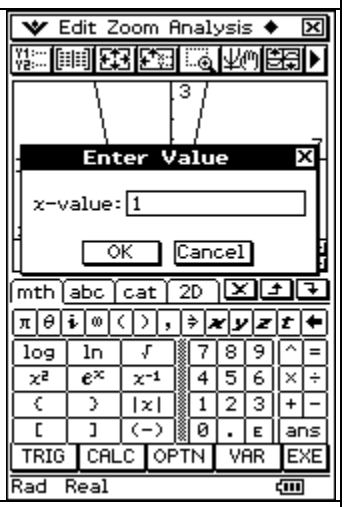
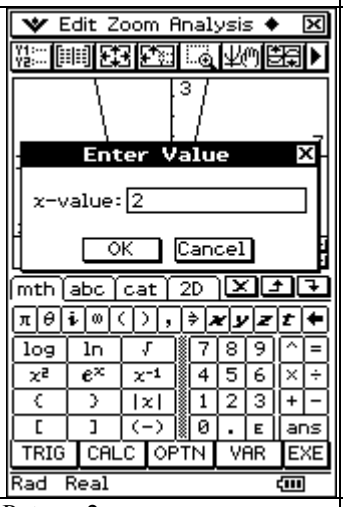
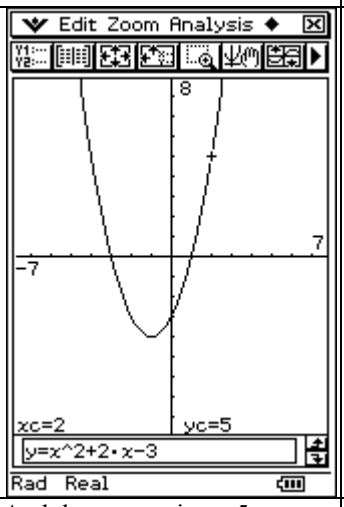
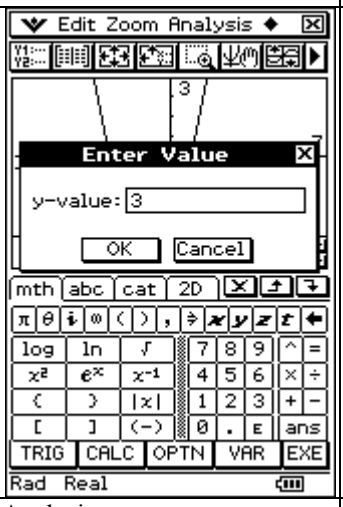
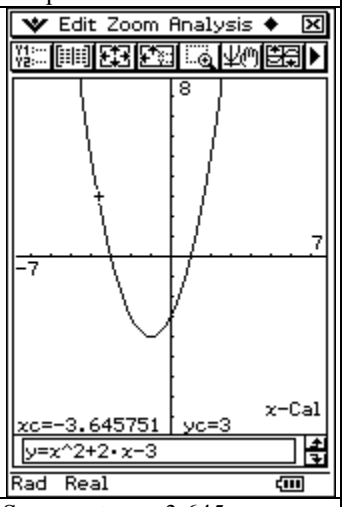




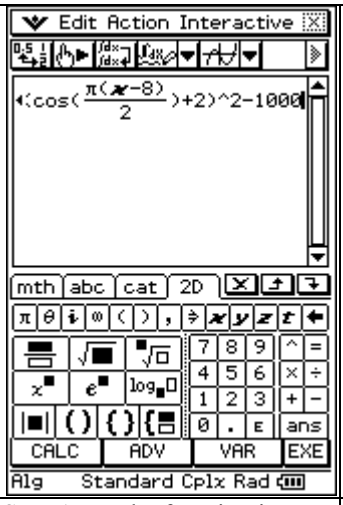
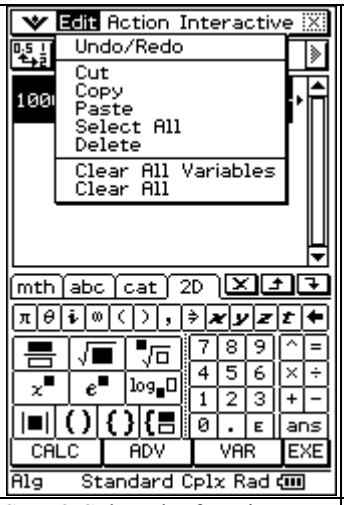
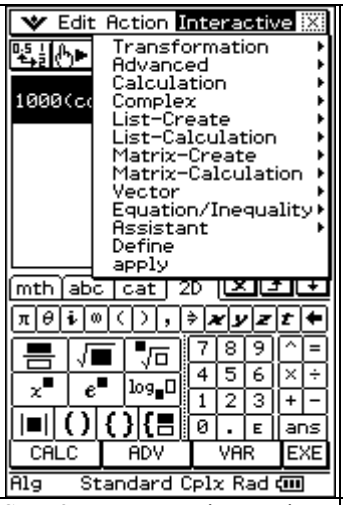
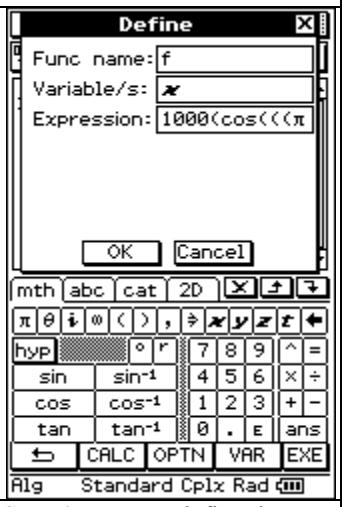
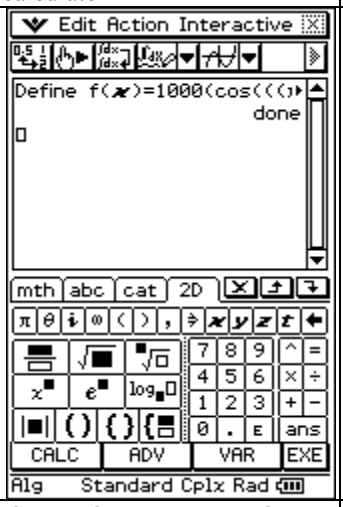
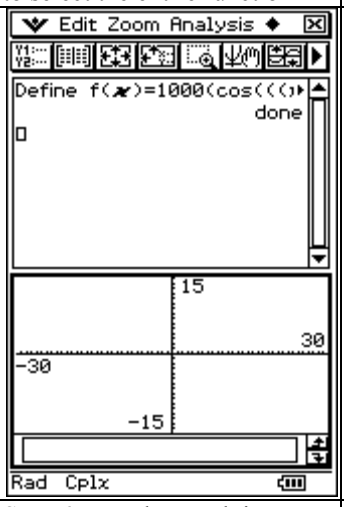
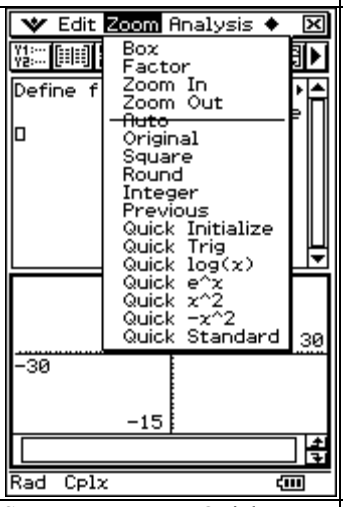
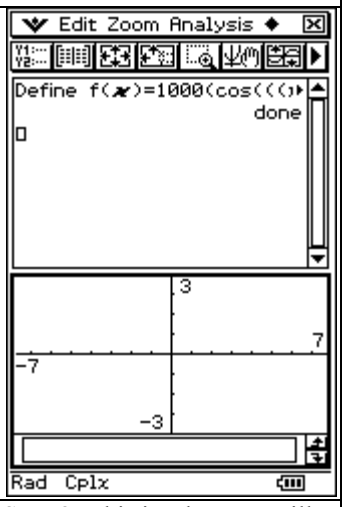
So we have defined the two equations now all you have to do is

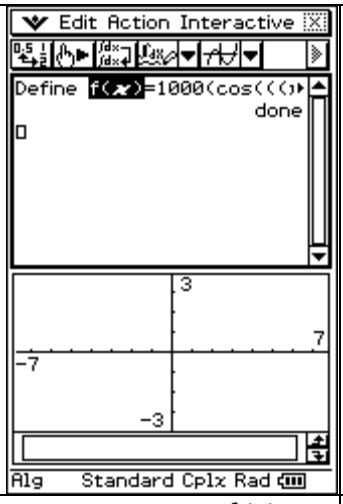
Write $f\left(g(x)\right)$



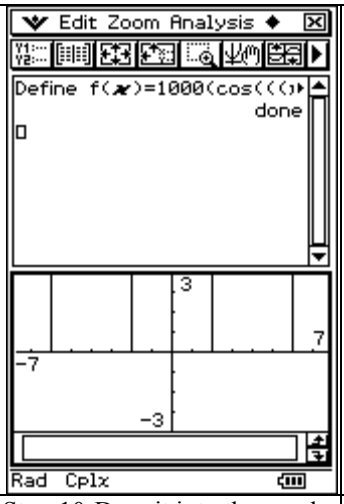
			
Press EXE And that is the answer	We can draw it , of course we have not defined the range or the domain of the composite function	Resize the function so we can see the entire screen.	Go to zoom Quick x^2 to get it the graph to look better on the screen
Jump to an exact coordinate in a graph at a particular point- x-CAL or y-CAL			
Using the example from before we can find the value of y for any particular value of x			
			
Using the graph from the previous example	Press 1 in the graph sceen	Enter 2.5	Press Analysis G-Solve Then y-Cal We put the value for x
			
Put x = 2	And the answer is y =5	Analysis G-Solve The n x-Cal Now enter y = 3	So we get x = -3.645

Graphs-function-classpad-examples

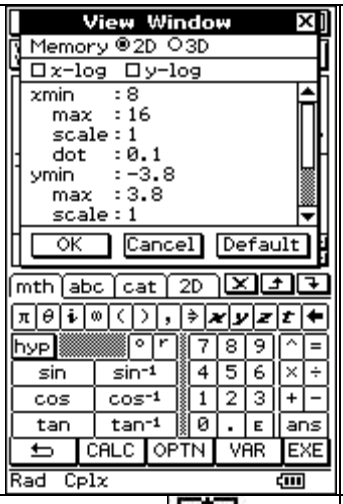
Sketching Graphs			
Sketch the following graph $f(x)=1000\left(\cos\left(\frac{\pi(x-8)}{2}\right)+2\right)^2-1000 \quad 8\le x\le 16$			
			
Step-1-Put the function into the main window of calculator	Step-2-Select the function ,select edit and then select all to select the entire function	Step-3- Now go to interactive and tap on define	Step-4-Now we define the equation by calling it
			
Step-5-Once you press OK from the previous step this is what you will see. Notice we have defined the equation with the symbol $f(x)$	Step-6- Tap the graph image which will open a graph window in the bottom half of the screen	Step-7-Tap Zoom Quick Initialize It set the screen	Step-8- This is what you will see when you have pressed zoom quick initialize



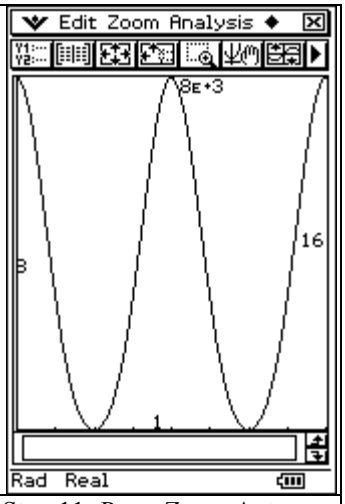
Step-9- Now select $f(x)$



Step-10-Drag it into the graph window and this is what you will see



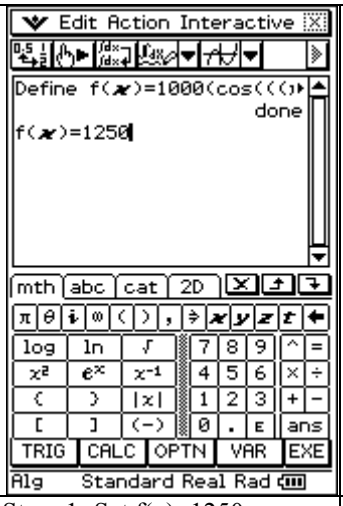
Step-11- Press  and set the window setting. Use the domain information



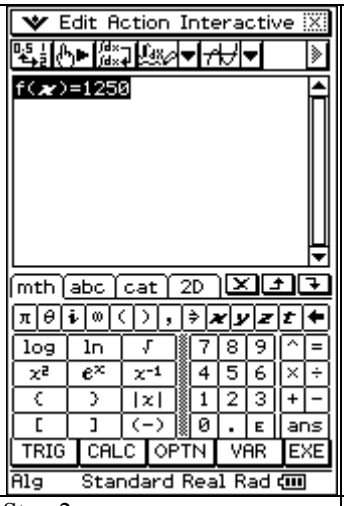
Step-11- Press Zoom Auto and select full resize window and this is what you will get

Finding exact values for a particular function

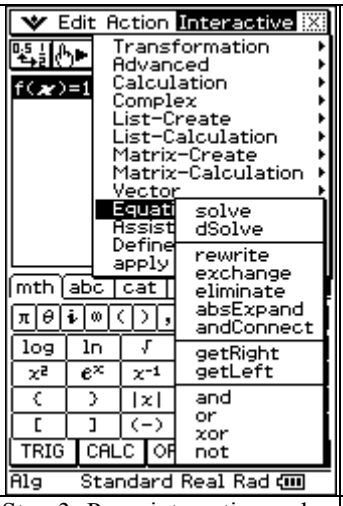
Finding the exact values of the above function how do we do it. For example how do we find $f(x)=1250$, $8\le x\le 16$



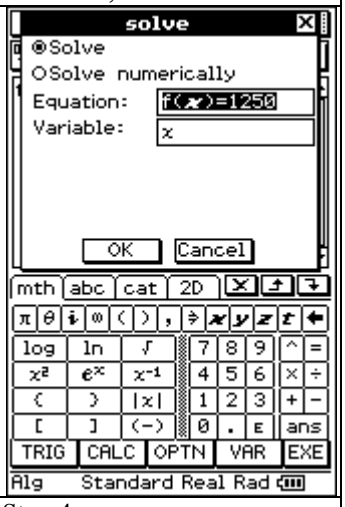
Step -1- Set f(x)=1250



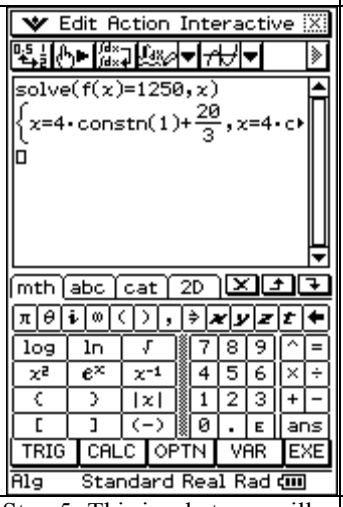
Step-2-
Now highlight this expression by pressing Edit and select all



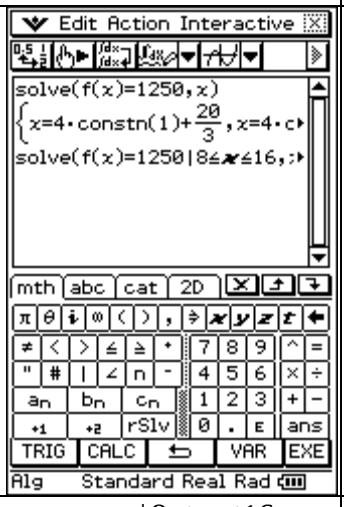
Step-3- Press interactive and then equation and then solve



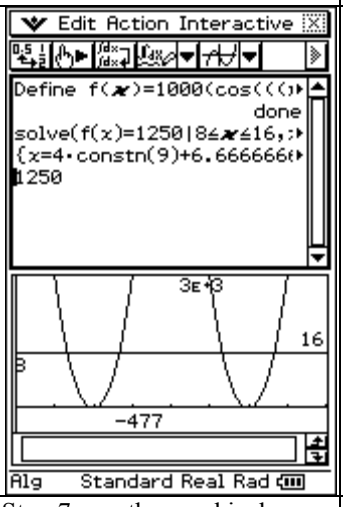
Step-4-
This is what you will see when you press solve
Now press OK



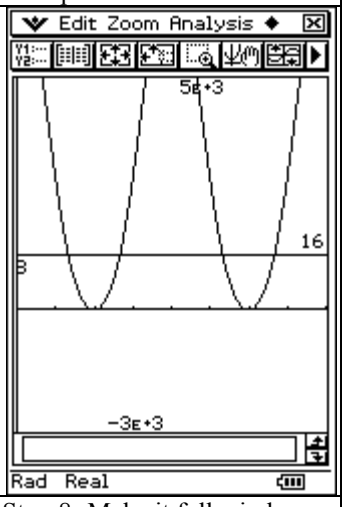
Step-5- This is what you will see which does not make any sense does it?



Step-6- Put $|8\le x\le 16$ before the ,x



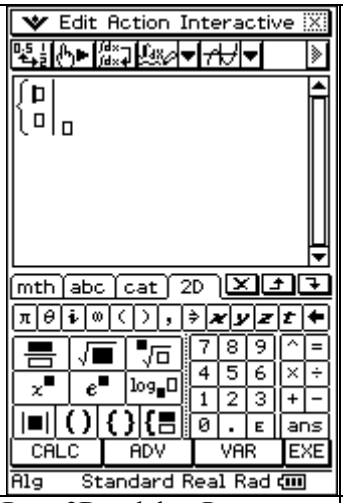
Step-7- see the graphical solution by typing 1250 and dragging them into graph window



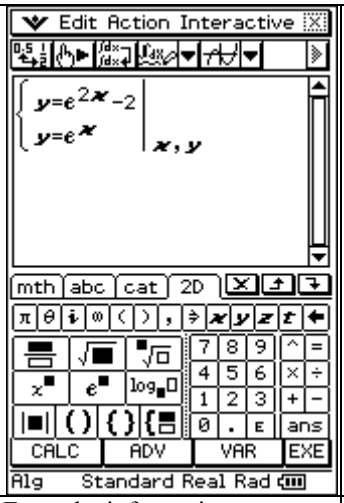
Step-8- Make it full window

Finding the intersection point of two graphs exactly.

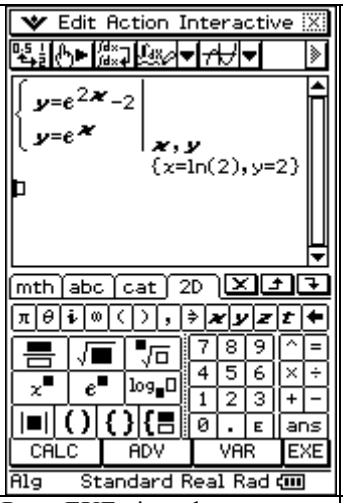
Finding the intersection between two graphs $f(x)=e^{2x}-2$ and $g(x)=e^{x}$



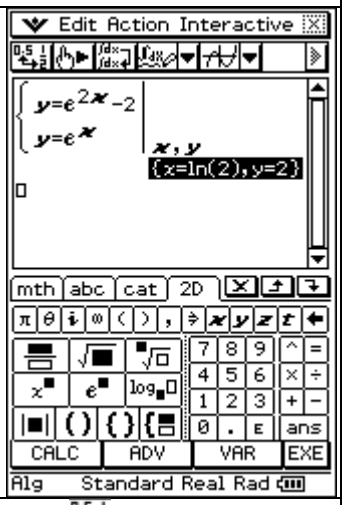
Press 2D and then Press simultaneous template



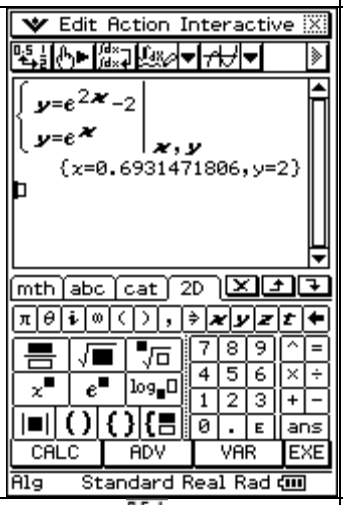
Enter the information very carefully



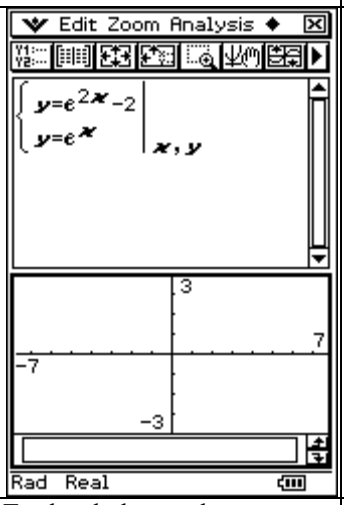
Press EXE gives the following screen above



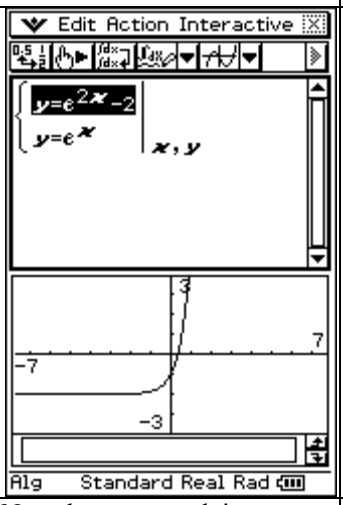
Press $\frac{0.5}{2}$ will give us the decimal equivalent
First you must highlight it



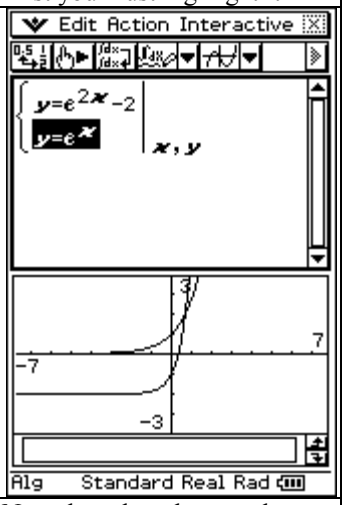
Now press $\frac{0.5}{2}$ will give us the decimal equivalent



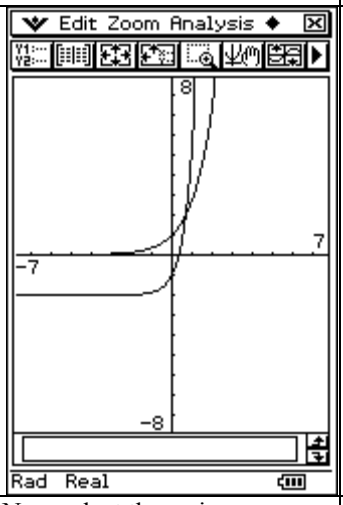
To sketch the graphs you can open the split screen
Tap the graph screen and press zoom-quick initialize



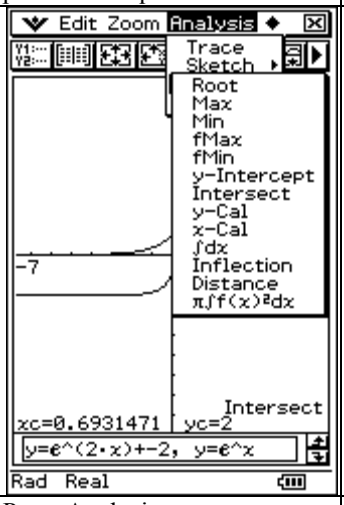
Now drag top graph into screen below
And this is what you will see above



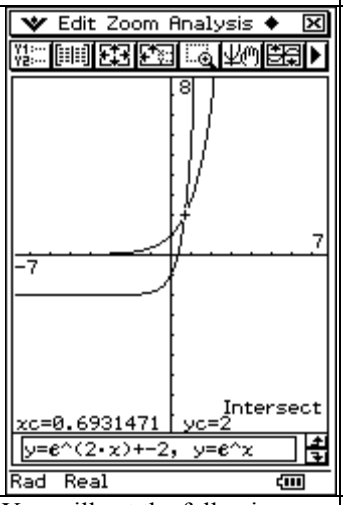
Now drag the other graph



Now select the resize screen to make the graph take up the entire screen



Press Analysis
G-Solve
Interect

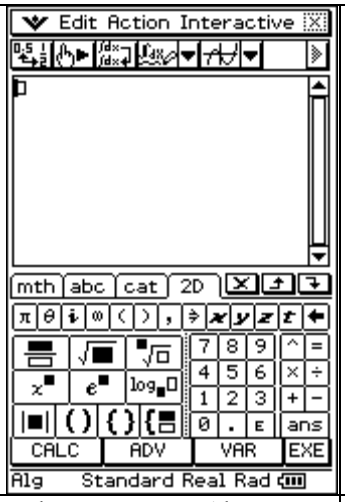


You will get the following

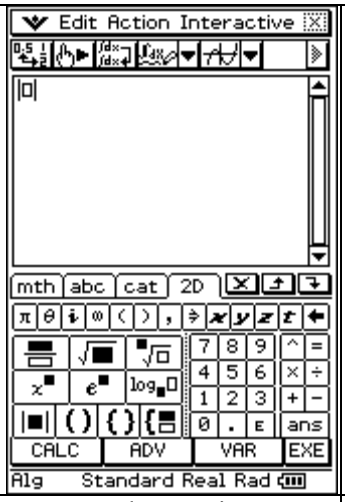
Notice where the graphs intersect x= 0.69 and y = 2

Finding the minimum and maximum values in exact format

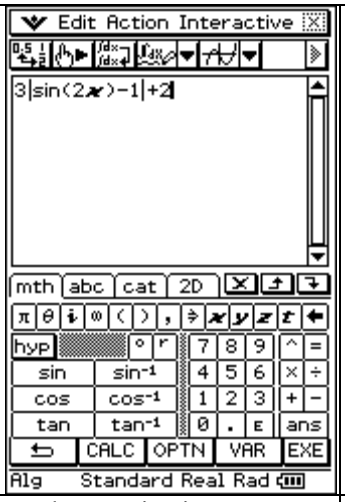
Find the range of the function $f:\left[0,\frac{\pi}{3}\right)\to R\ \ f(x)=3|\sin(2x)-1|+2$



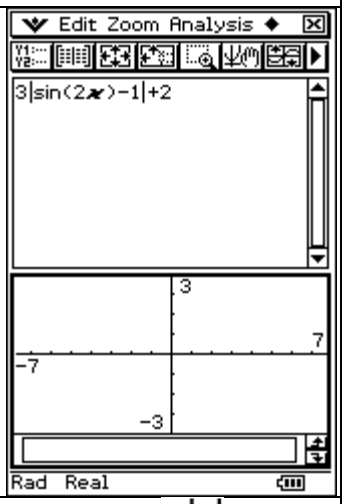
Make sure you set Alg, Standard, Real and Rad mode first



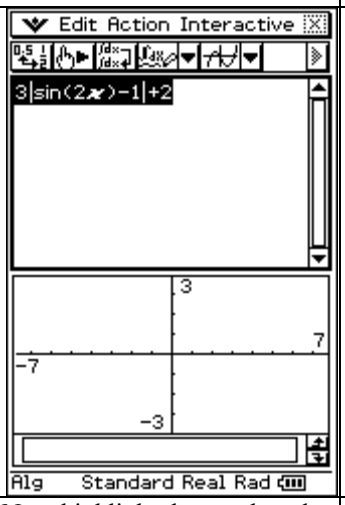
Now enter the equation very carefully
Use 2D for the brackets



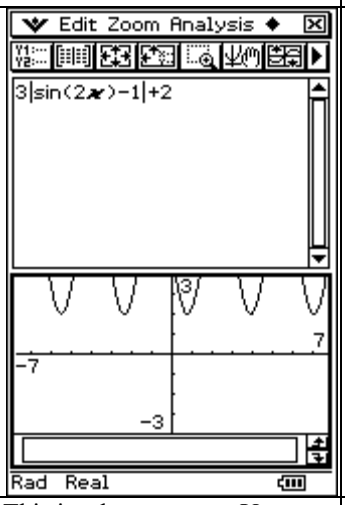
Put the equation in



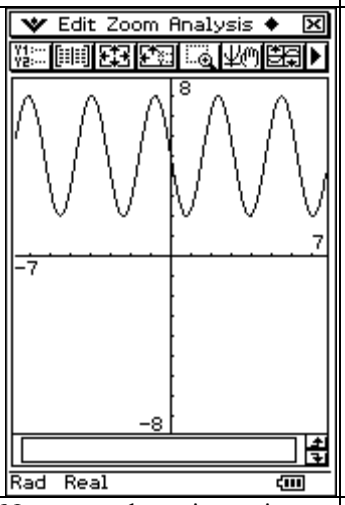
Tap the graph  which will open the graph window in the bottom half



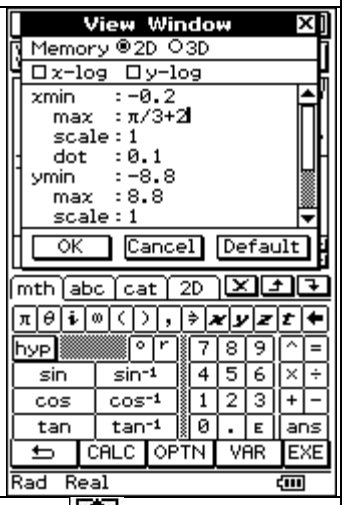
Now highlight the graph and drag it into the graph window



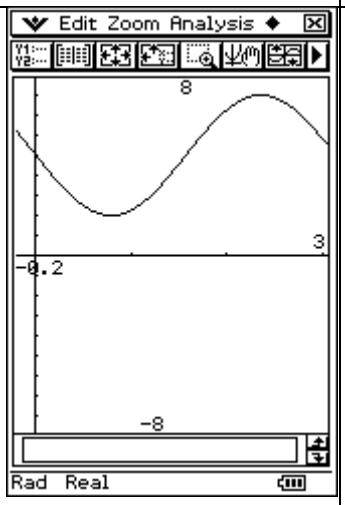
This is what you see. You might have to press ZOOM Quick Initialize

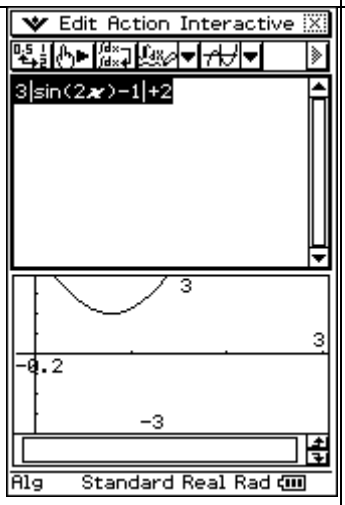


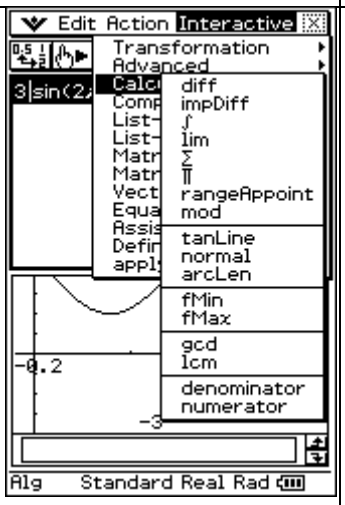
Now press the resize option

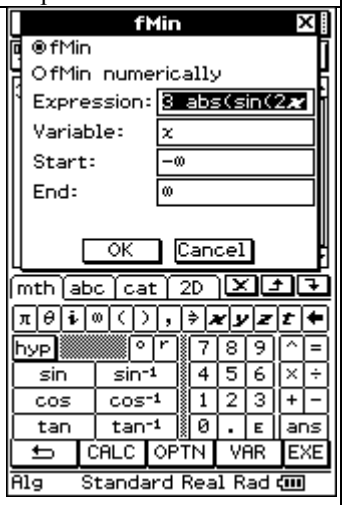


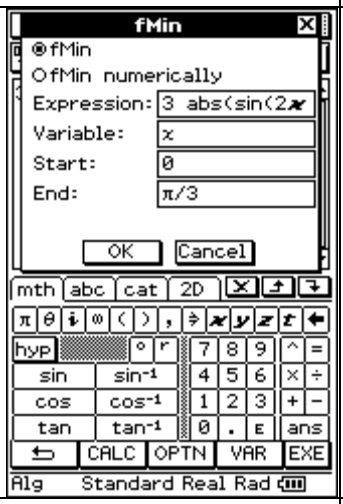
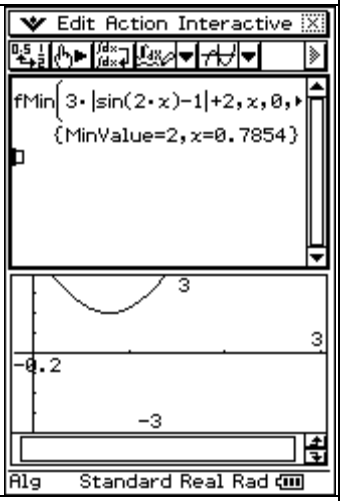
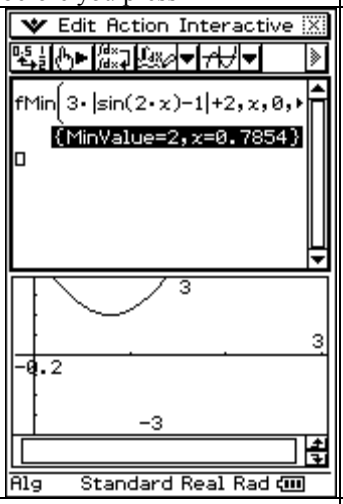
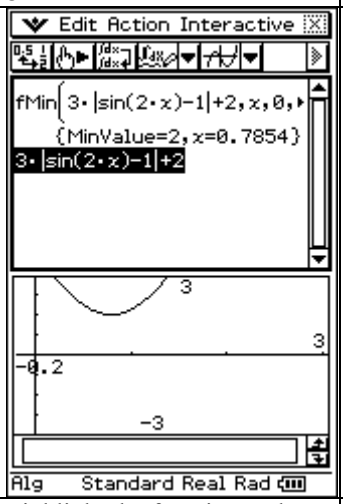
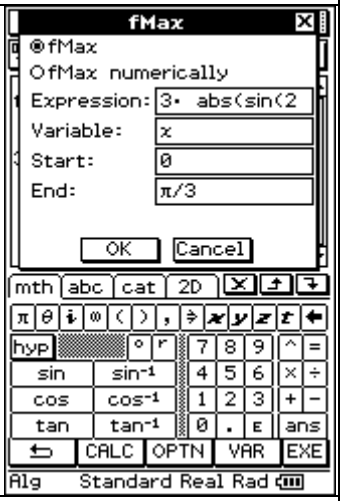
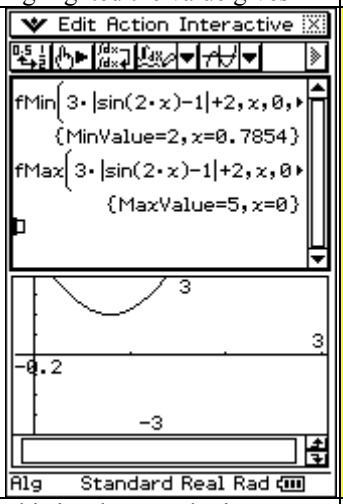
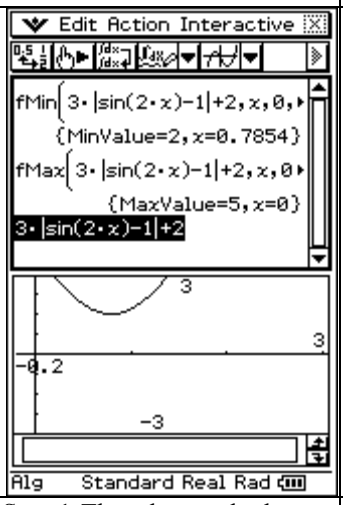
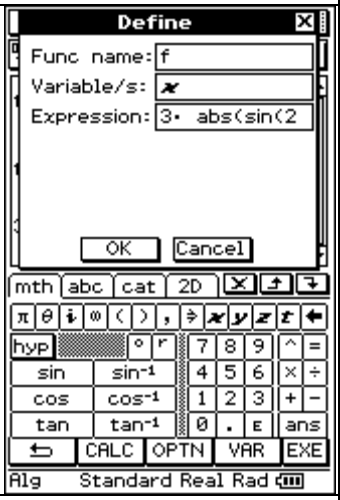
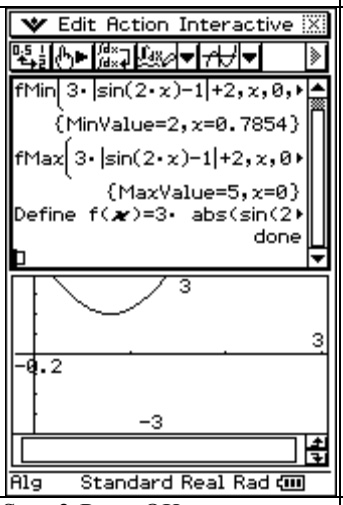
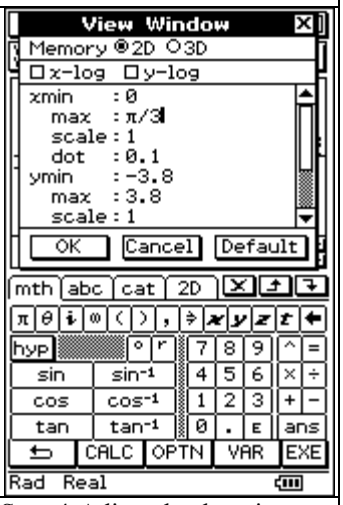
Press  to enter the domain information. Good to choose values just outside the value so you can see if the max or min occurs at the endpoints

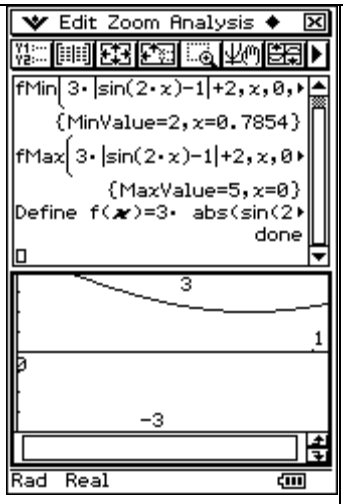
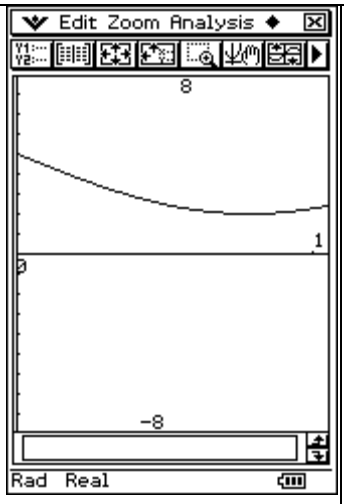
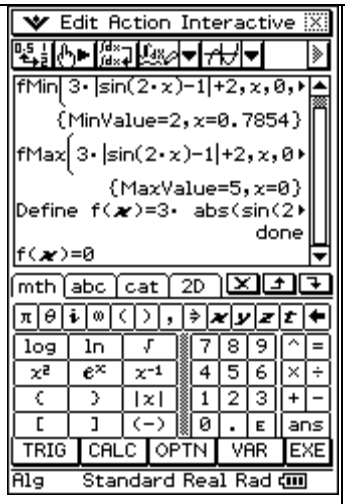


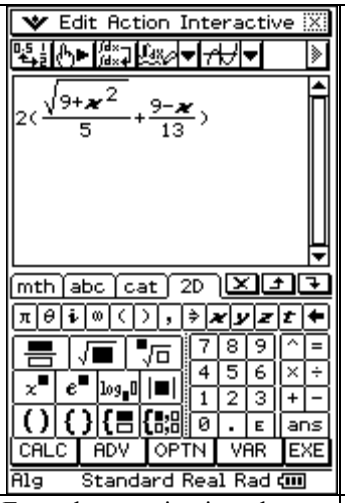
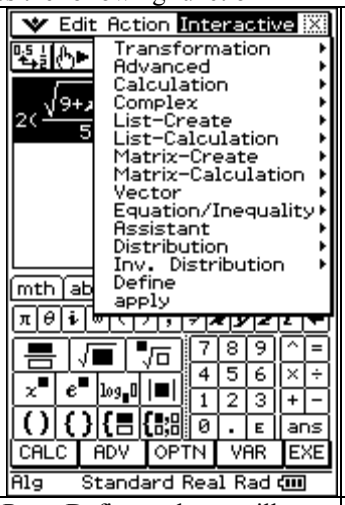
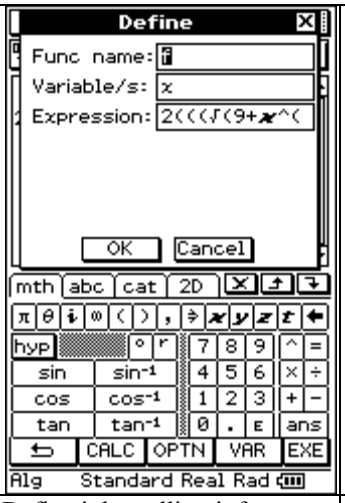
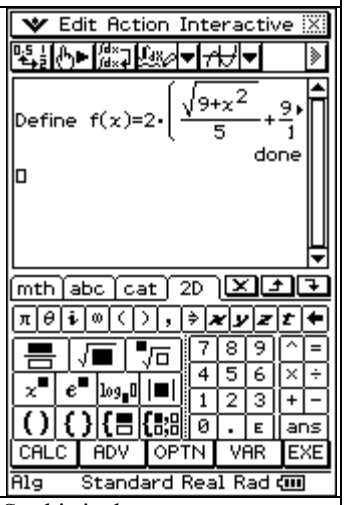
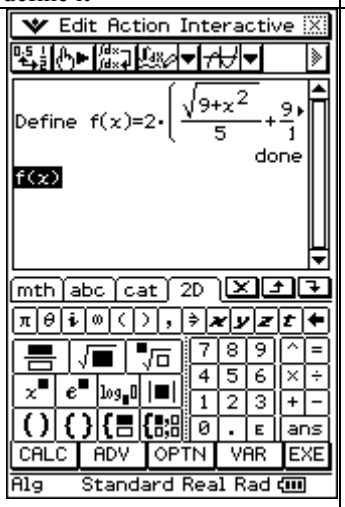
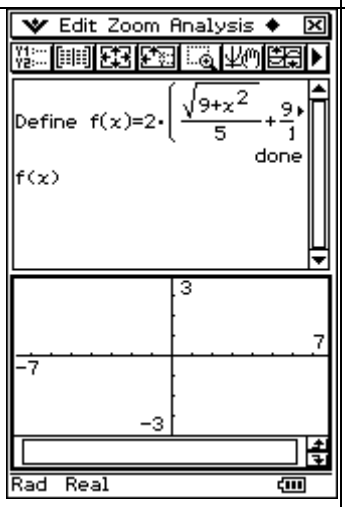
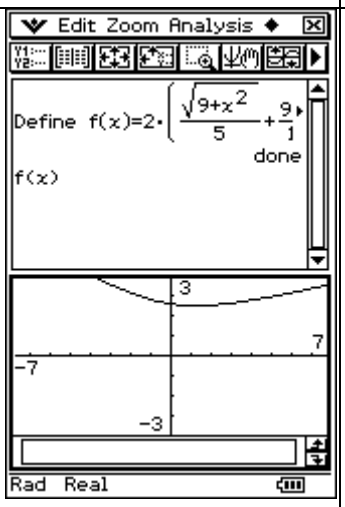
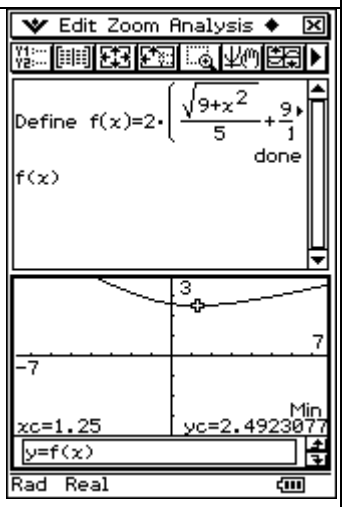
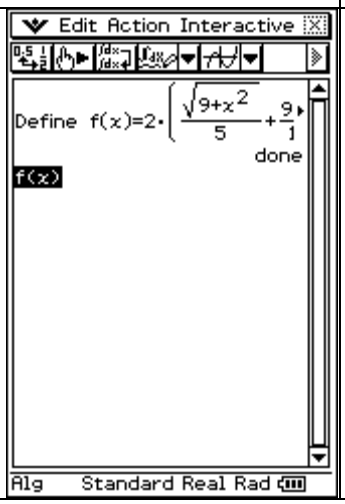
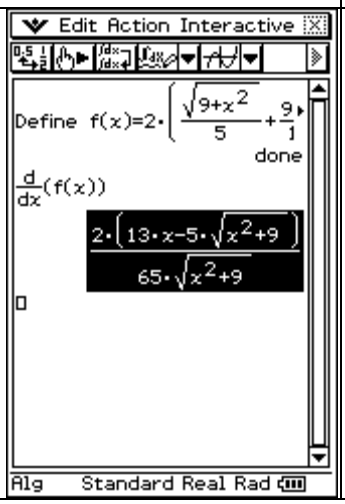
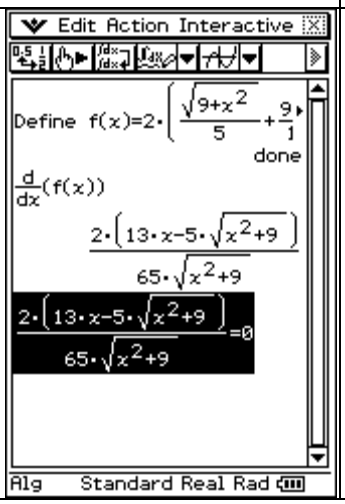
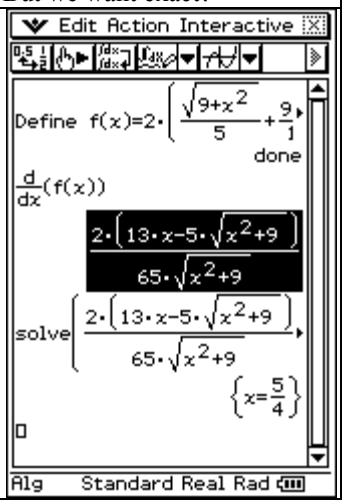


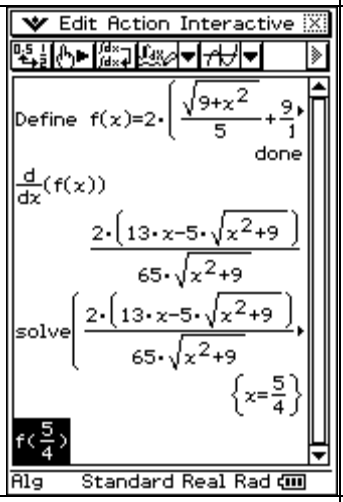
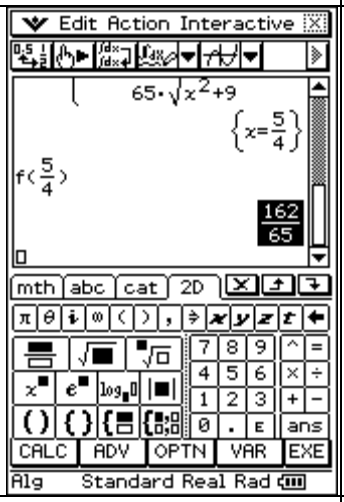




Press OK gives the above	Select the function and go to interactive-calculation-fMin	This is the screen you will see before you press fMin	Now enter the start and the ending values
			
We have entered the start and the end values and we press OK	This is what we obtain once we press OK So the MinValue = 2 at x = 0.7854	Press the decimal to exact button once you have highlighted the value gives	
			CAUTION fMIN and fMAX will only return ONE VALUE for a minimum or maximum even if there are other values. So if the function repeats itself then we will need to use another method.
Highlight the function and go through the entire process	Put the values in and press OK	This is what we obtain	So the range is [2,5]
			
Step-1-The other method-highlight the equation and we will define it	Step-2-Define it by calling it f	Step-3-Press OK	Step-4-Adjust the domain again

			
Step-5-Press OK	Step-6-Press resize for graph	Step-7-Now we want to find the derivative of f and set it to zero to find the values of the minimum	Highlight it and go

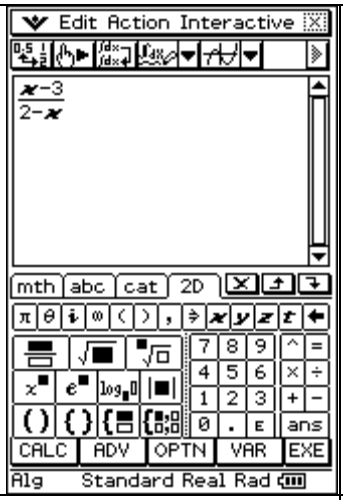
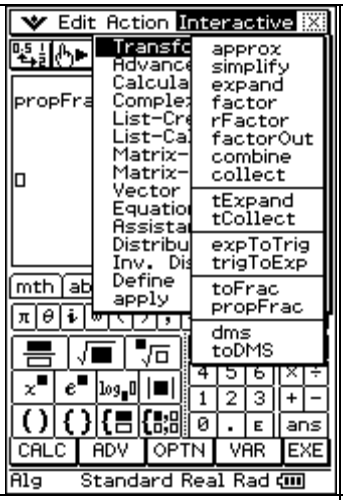
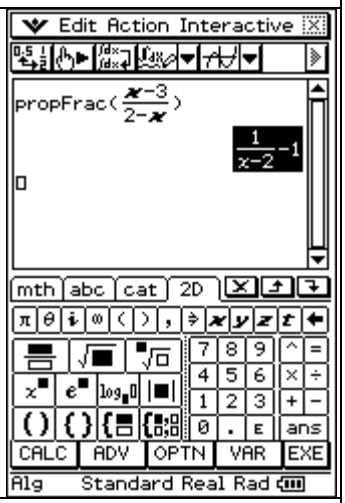
How do I find the minimum or max value of a function for all real values of x if exact values are required			
Find the value of x that minimizes the following function			
			
Enter the equation into the main screen Highlight the equation to define it	Press Define and you will get the following	Define it by calling it f	So this is the screen we get once we have defined the equation.
			
Write f(x)	Now open graph screen to see what the graph looks like Press the graph symbol	Now tap on the graph screen to zoom –quick initialize and then drag f(x) into the graph section	We can use the graph to find the minimum Press analysis G-Solve Min And we will get the minimum in decimal But we want exact?
			

Go back and highlight f(x) and then	Go interactive Calculate Diff	Now drag this function and set it to zero and solve the equation	We get the precise value for the minimum which is $\frac{5}{4}$
			
Now write $f(\frac{5}{4})$ and let the calculator find the y value or f(x)	Press EXE And we have obtained the answers in exact form	So the exact values are $x=\frac{5}{4}$ and $y=\frac{162}{65}$	

Sketching rational functions and showing asymptotes

Sometimes we are given a function and we can see that it possibly has an asymptote but it is not in the usual form so what can we do?

Put the following into an easier form to recognize its asymptotes - $f(x)=\frac{x-3}{2-x}$

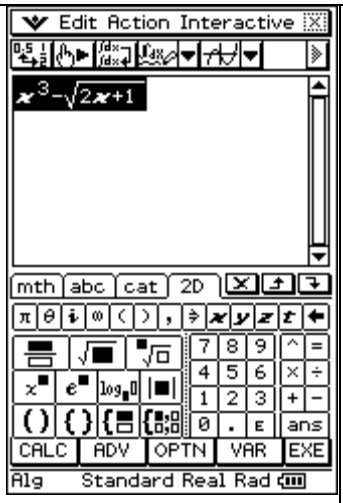
			
Go to Main section and then go 2D and select the fraction mode and put the equation in	Highlight the function	Tap –interactive Transformation propFrac	This is what you will get
And it is easy to see that we have two asymptotes one at X =2 and y = -1			

Calculus-Classpad-Examples

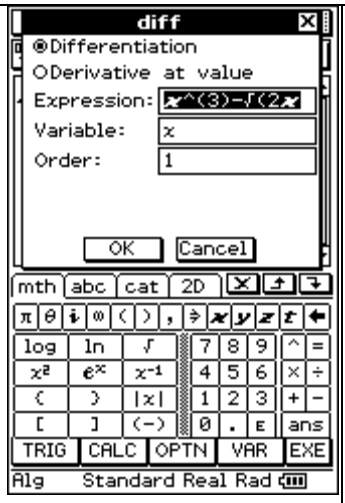
Finding the Derivatives of given functions

How do I find the derivative of a particular function?

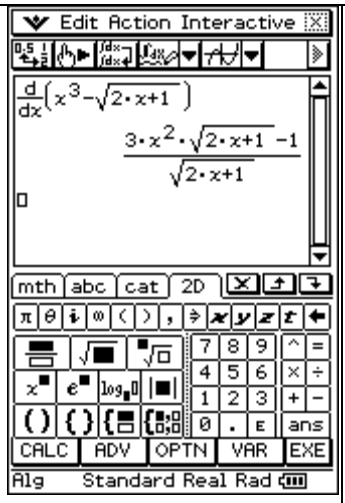
Find the derivative of the function $y = x^3 - \sqrt{2x+1}$



Enter the function into the main window of the calculator and highlight it



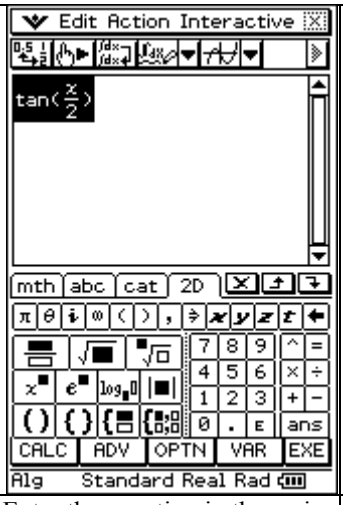
Tap interactive
Calculation
Diff
Press OK when you get the following



And that is your answer there

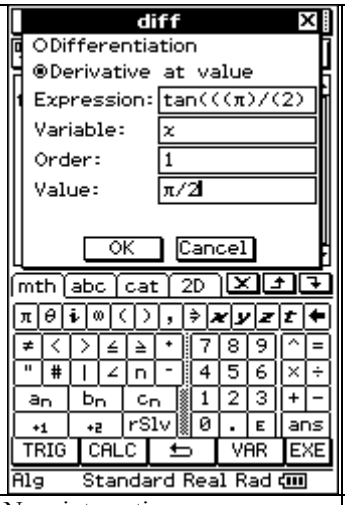
Derivative at a particular point

Say we want to find the derivative of the function $f(x) = \tan\left(\frac{x}{2}\right)$ and we want to find the derivative $f'\left(\frac{\pi}{2}\right)$



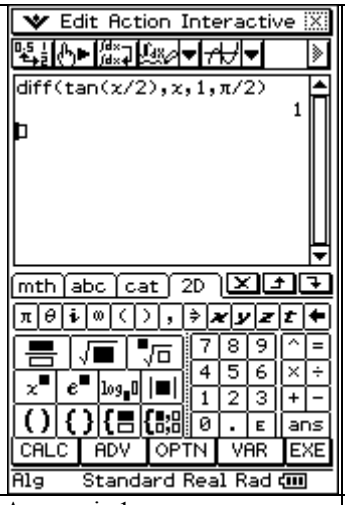
Enter the equation in the main window and highlight once again.

Remember to use the 2D section to input the $\frac{x}{2}$



Now interactive
Calculate
Diff
But this time derivative at a point

Press ok

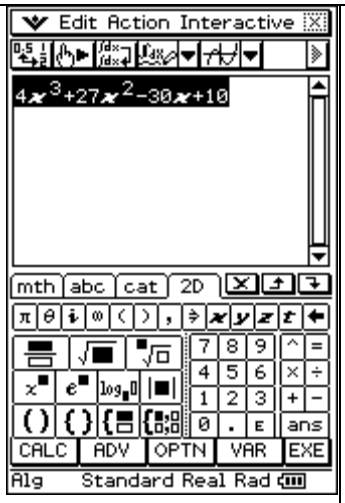
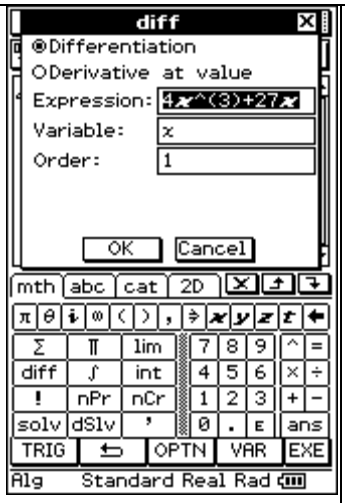
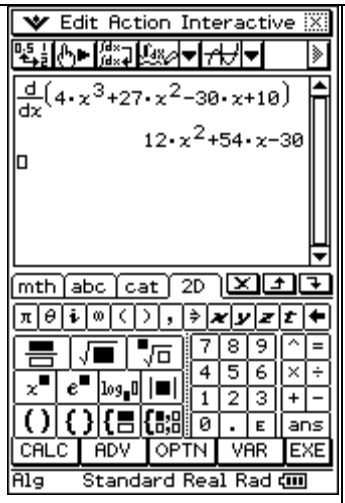
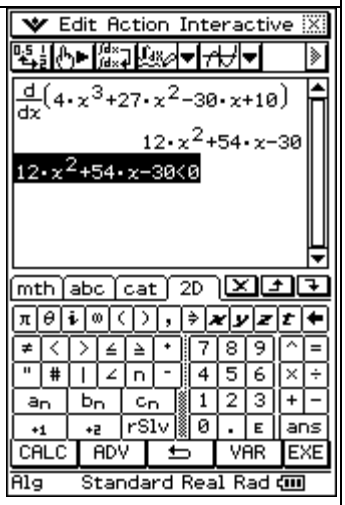
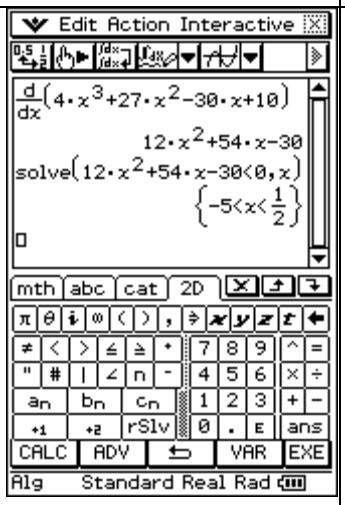
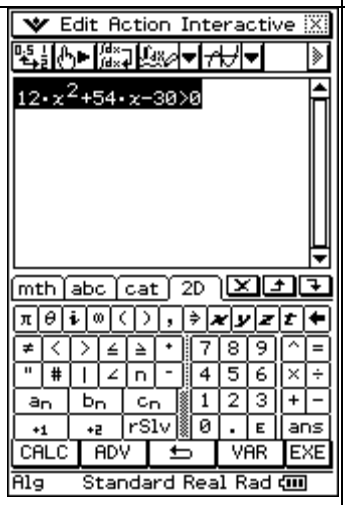
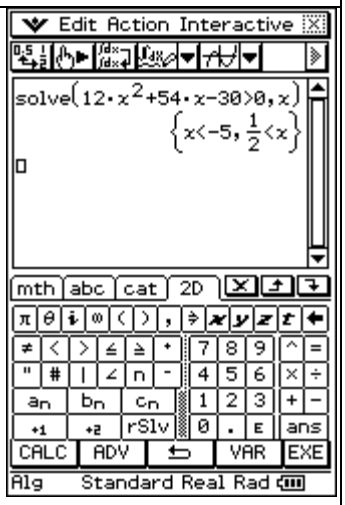


Answer is 1

Finding the sign of the derivative

How do we calculate when the derivative is negative- positive or zero?

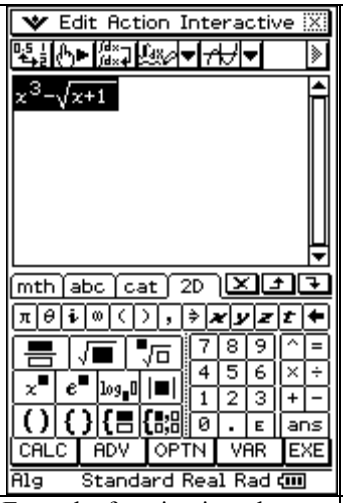
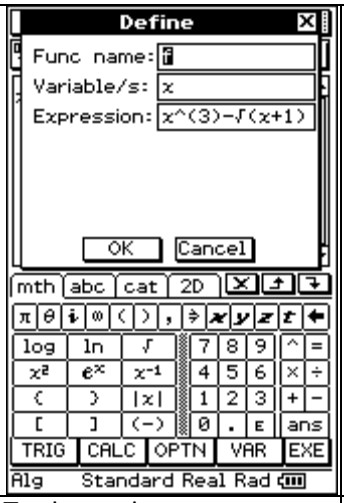
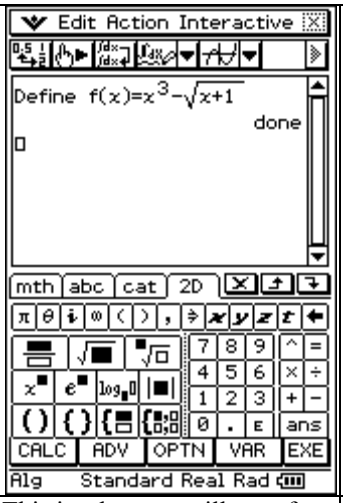
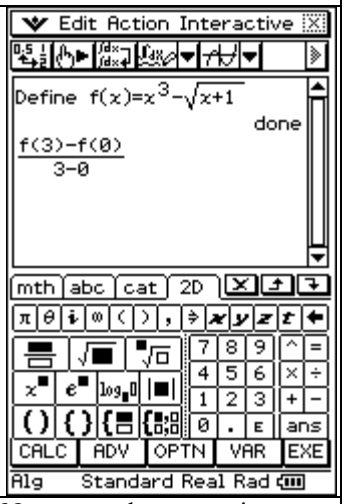
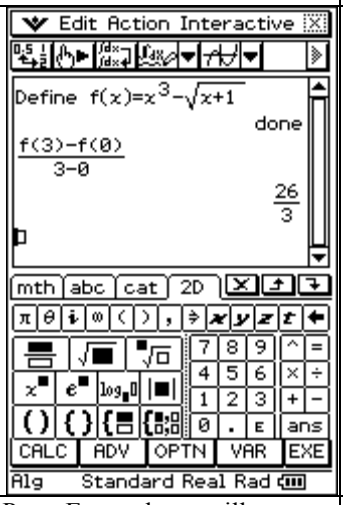
Example: Find when the derivative of $y = 4x^3 + 27x^2 - 30x + 10$ is negative

			
Put the expression into the main window of the calculator and make sure you highlight it.	Find the derivative first by going to Interactive Calculation Diff Press Ok	We have obtained the derivative	Now select the derivative and Put it on a separate line Make it < 0 Now highlight it
	So the answers are $-5 < x < \frac{1}{2}$		
Now go interactive Equation Solve	Here we see the answers when the derivative is less than zero	What if we wanted to find where the derivative was greater than zero , >0 we would repeat the last step	Go to interactive Equation Solve and you would get the answer

Finding the average rate of change

How do we calculate the average rate of change of a particular function?

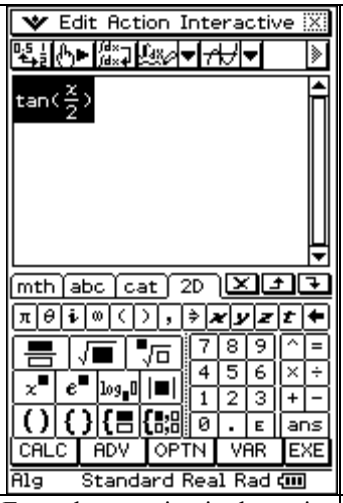
For example find the average rate of change of the function $f(x) = x^3 - \sqrt{x+1}$ between x = 0 and x = 3

			
Enter the function into the main window. Highlight the function	Tap interactive Define And call it f And press ok	This is what you will see after you press OK	Now enter the expression $\frac{f(3)-f(0)}{3-0}$
			
Press Exe and you will see the above So the answer is $\frac{26}{3}$			

Tangents and Normal's

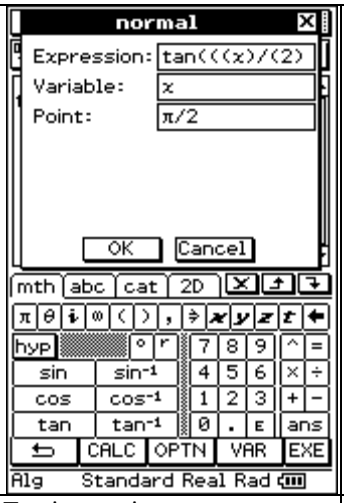
How do we find the equation of the normal or tangent to the graph of a function?

For example: Find the equation of the normal to the graph $y = \tan\left(\frac{x}{2}\right)$ at the point where $\frac{\pi}{2}$



Enter the equation in the main screen the equation $\tan\left(\frac{x}{2}\right)$

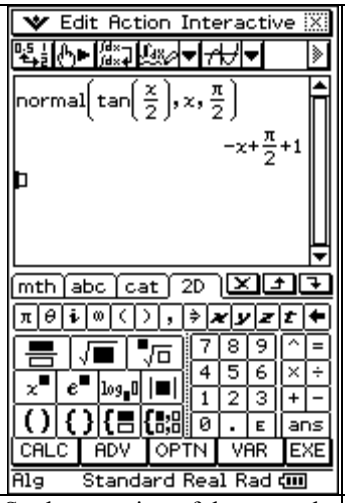
And highlight it



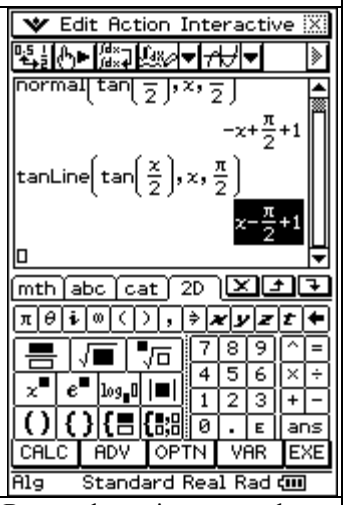
Tap interactive
Calculation
Then Normal

And put the point $\frac{\pi}{2}$

Press OK



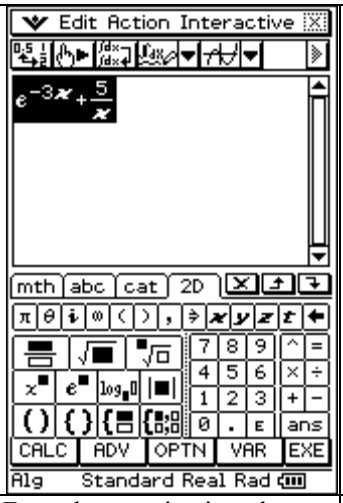
So the equation of the normal is given as $y = -x + \frac{\pi}{2} + 1$



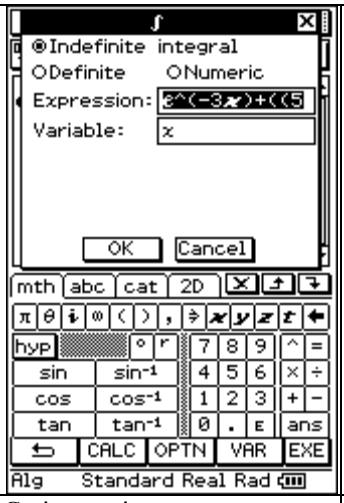
Repeat the entire process but this time use tanline to get the tangent to the line and you will get the above

Indefinite Integral

How do we calculate the indefinite integral? For example how do we find the $\int\left(e^{-3x} + \frac{5}{x}\right)dx$

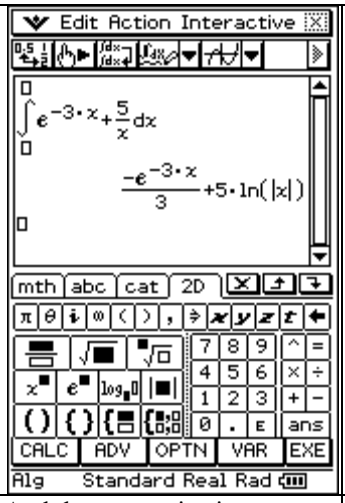


Enter the equation into the main section of the calculator
Highlight the equation



Go interactive
Calculation
The $\int$

Now make sure indefinite integral and press OK

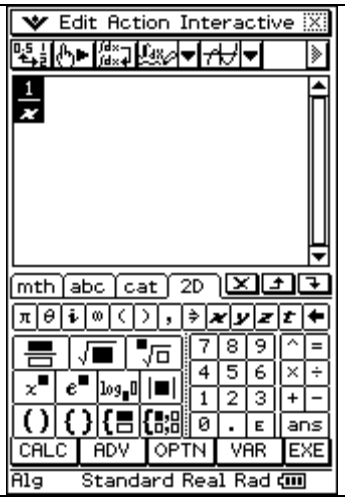


And the answer is given

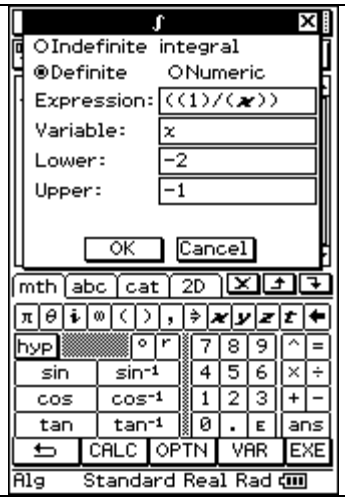
Definite Integrals

Now we need to find the definite integral.

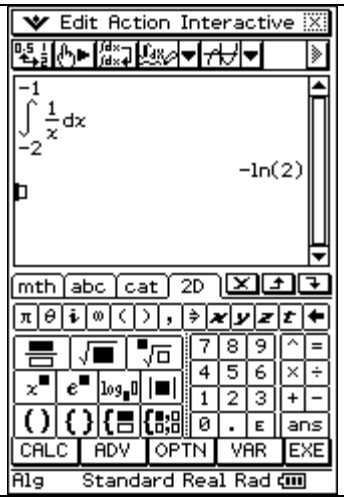
Find the value of $\int_{-2}^{-1} \frac{1}{x} dx$



Enter the equation into the main area of the calculator and make sure you highlight it



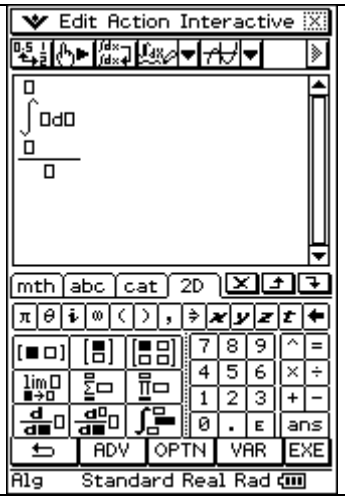
Go interactive
Calcuation
Then $\int$
This time selected definite



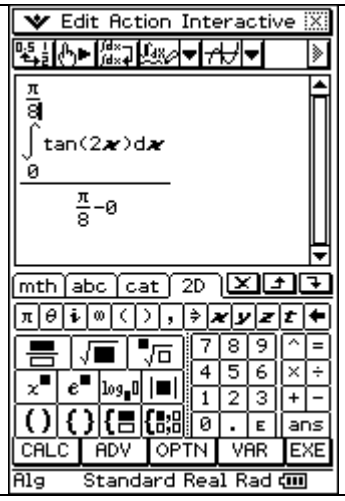
Press OK and answer is given

Finding the average value of a function over a given interval

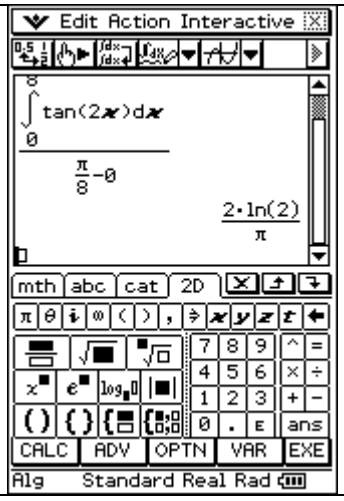
Find the average value of the function $y = \tan 2x$ over the interval $\left[0, \frac{\pi}{8}\right]$



Put the function into the main area of the calculator using 2D expression
First press the division
Then enter the integral expression



Now enter the numbers

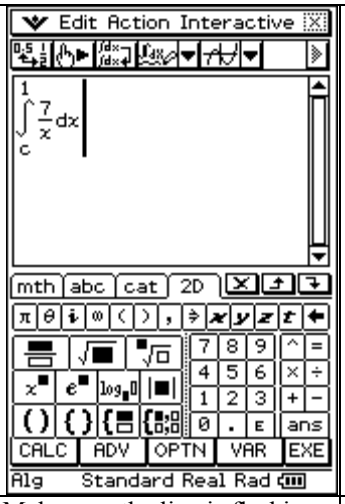
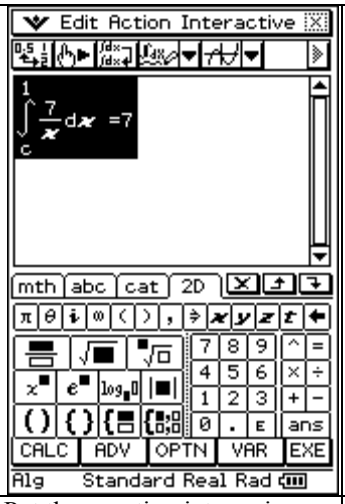
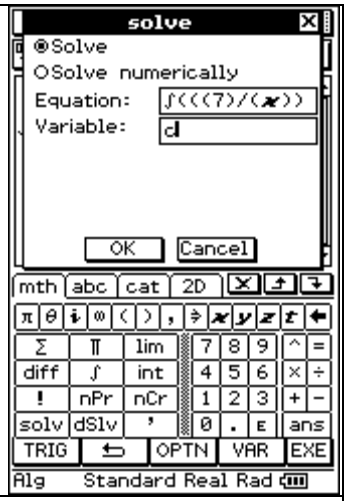
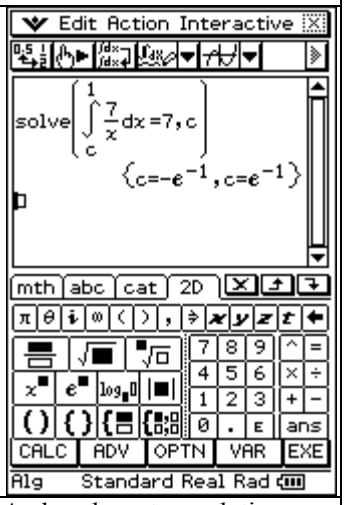


Now press EXE and answer is given

Solving definite equations

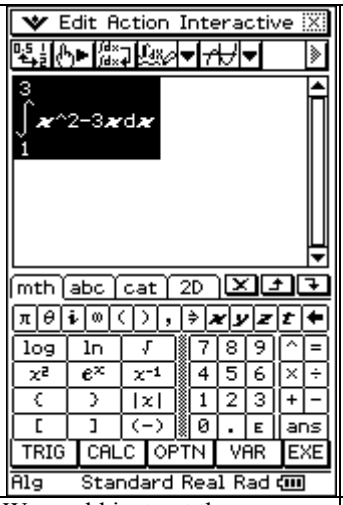
Sometimes we need to solve for an unknown in an equation involving a definite integral.

For example : We are asked find the value of c in the following equation $\int_c^1 \frac{7}{x} dx = 7$

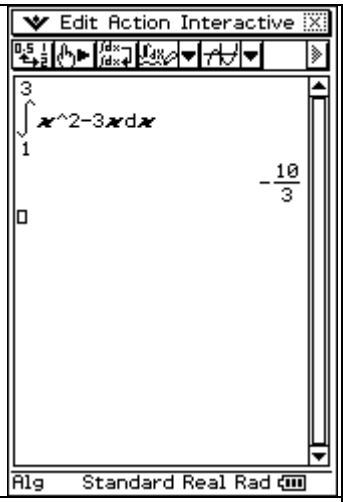
			
Make sure the line is flashing before you put the = 7 otherwise you will not get any solutions IMPORTANT-remember flashing! Cursor and then	Put the equation into main view and then highlight it. **Make sure there is a gap between dx and =**	Go to interactive Equation Solve And make sure you put c for the variable you want.	And we have two solutions. You will need to check the questions to see if both solutions are included.

Definite integration

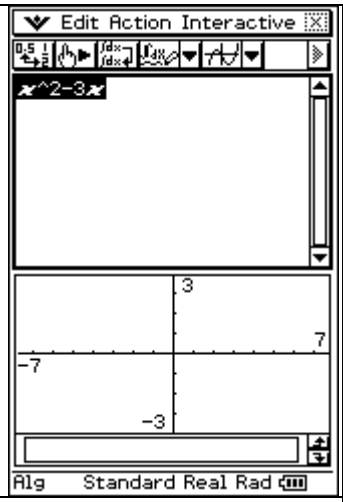
Let us see how we can find the following: $\int_1^3 (x^2 - 3x)dx$



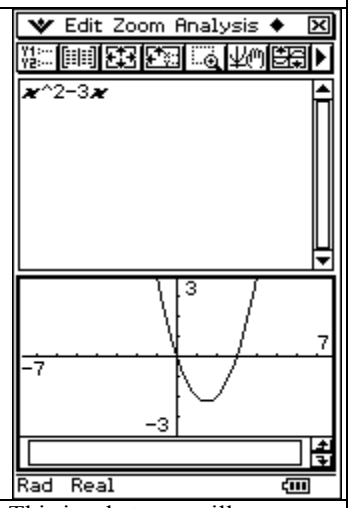
We could just put the equation in and press EXE



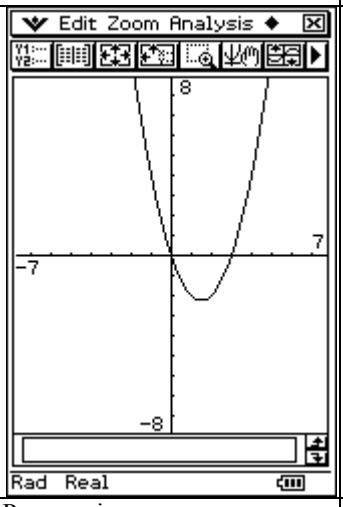
And we have the answer
But sometimes it is better to see the graph of the function



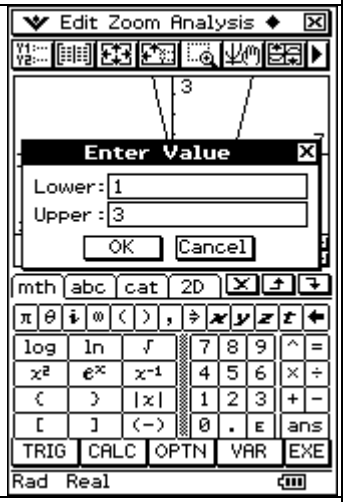
Put the graph into the main screen
Then click on the graph button
Highlight the equation and drag it into the bottom screen



This is what you will see

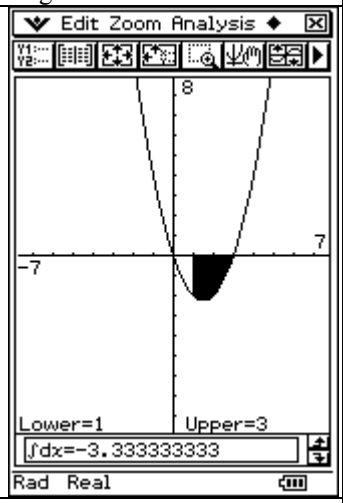


Press resize screen



Now you can press
Analyse
G-Solve
Then the integration symbol

Press 1  on the keyboard
We now enter the values of x



And we get the answer to the integration.