Calculator Basics for the TI-89 Titanium & Voyage[™] 200

To effectively use your TI-89 Titanium or Voyage[™] 200 calculator in Calculus there are several things you will need to be familiar with. Settings will need to be found and changed. Some of the settings you will use frequently can be found as follows:

SETTING	TI-89 Titanium	Voyage TM 200
DARKEN/LIGHTEN DISPLAY	 -/+ keys + key darkens the display, - key lightens the display. These may be pressed repeatedly to obtain the darkness you wish. 	 ◆ -/+ keys + key darkens the display, - key lightens the display. These may be pressed repeatedly to obtain the darkness you wish.
ENTRY LINE	The active entry line is at the bottom of the calculator screen. All typed entries appear here first. You can edit this line. When you press enter it will be placed in the history area above the line. To clear the entry line press the CLEAR key.	The active entry line is at the bottom of the calculator screen. What you type is put in here. You can edit this line. When you press enter it will be placed in the history area above the line. To clear the entry line press the CLEAR key.
HISTORY SCREEN	The history screen is the area above the entry line on your calculator. The default is set to retain the last 30 calculations you have made. You can arrow up to the history area, highlight an entry , and press enter to 'paste' a previous entry into the active entry line. To clear the history area press F1 8.	The history screen is the area above the entry line on your calculator. The default is set to retain the last 30 calculations you have made. You can arrow up to the history area, highlight an entry, and press enter to 'paste' a previous entry into the active entry line. To clear the history area press F1 8.
MODE OPTIONS	Press MODE There are a number of options hidden in three pages of MODE menus. They are accessed by pressing F1 , F2 , or F3 .	Press MODE The Voyage 200 has three pages of MODE options. They are accessed by pressing F1, F2, or F3.
GRAPH	The Graph menu allows you to select from Function , Parametric , Polar , Sequence , 3D or Differential Equation graphs. (on F1 page)	The Voyage 200 allows you to select from Function , Parametric , Polar , Sequence , 3D or Differential Equation graphs. (on F1 page)

	The TI OO THE	The Verse 200 - 11		
	The TI-89 Titanium allows you to	The Voyage 200 allow you to create		
	create multiple folders to use for	multiple folders to use for storage of		
CURRENT	storage of user defined variables.	user defined variables. The		
FOLDER	The calculator comes with a built-in	calculators come with a built-in		
	folder called MAIN. (on F1 page)	folder called MAIN. (on F1 page)		
	Choose the number of digits	Choose the number of digits		
DISPLAY DIGITS	displayed from 12 fixed or 13	displayed from 12 fixed or 13		
	floating point settings. (on F1 page)	floating point settings. (on F1 page)		
	Choose between degrees or radians .	Choose between degrees or		
ANGLE	In calculus you usually want the	radians. In calculus you usually		
	calculator set in Radians . (on F1	want the calculator set in Radians .		
	page)	(on F1 page)		
	Allows you to choose between	Allows you to choose between		
EXPONENTIAL	Normal, Scientific or Engineering	Normal, Scientific or Engineering		
FORMAT	formats. The default is Normal .			
FUNIAI		formats. The default is Normal .		
	(on F1 page)	(on F1 page)		
	Allows you to choose between Real	Allows you to choose between Real		
	(does not display complex results),	(does not display complex results),		
COMPLEX	Rectangular (displays complex	Rectangular (displays complex		
FORMAT	numbers in a+bi form), or Polar	numbers in a+bi form), or Polar		
	form (complex numbers are	form (complex numbers are		
	displayed in $re^{i\theta}$ form). (on F1	displayed in $re^{i\theta}$ form). (on F1		
	page)	page)		
	When Pretty Print is on the	When Pretty Print is on the		
PRETTY	mathematics is displayed on the	mathematics is displayed on the		
PRINT	screen as you write it on paper. (on	screen as you write it on paper. (on		
	F1 page)	F1 page)		
	Allows you to choose between a full	Allows you to choose between a full		
	screen or a split screen where you	screen or a split screen where you		
	can have half history/text and half	can have part history/text and part		
SPLIT SCREEN	graphing or another application. (on	graphing or another application. (on		
	F2 page)	F2 page) When a split screen is		
	When a split screen is selected	selected other MODE options on		
	other MODE options on page F2			
	become available. You can	page F2 become available. You can		
		designate which application appears on which part of the split		
	designate which application			
	appears on which part of the split.	as well as choosing between a 1:1,		
		1:2 or 2:1 split screen ratio.		
	Choose between Automatic, Exact	Choose between Automatic, Exact		
		or Approximate display of rational		
	or Approximate display of rational			
EXACT/	and symbolic expressions. Precision	and symbolic expressions.		
EXACT/ APPROXIMATE	and symbolic expressions. Precision is increased in the exact setting by	and symbolic expressions. Precision is increased in the exact		
	and symbolic expressions. Precision is increased in the exact setting by elimination of most rounding errors.	and symbolic expressions. Precision is increased in the exact setting by elimination of most		
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APPROXIMATE	and symbolic expressions. Precision is increased in the exact setting by elimination of most rounding errors. (on F2 page)	and symbolic expressions. Precision is increased in the exact setting by elimination of most		
APPROXIMATE APPS	and symbolic expressions. Precision is increased in the exact setting by elimination of most rounding errors. (on F2 page) The APPS key allows you to access	and symbolic expressions. Precision is increased in the exact setting by elimination of most rounding errors. (on F2 page) The APPS key allows you to access		
APPROXIMATE	and symbolic expressions. Precision is increased in the exact setting by elimination of most rounding errors. (on F2 page)	and symbolic expressions. Precision is increased in the exact setting by elimination of most rounding errors. (on F2 page)		

	One of these options will usually get	One of these options will usually get			
ESC/	you out of wherever you are that you	you out of wherever you are that you			
2nd QUIT	don't want to be.	don't want to be.			
	$\mathbf{\mathbf{\hat{Y}}}$ is the shortcut.	\bullet Y = is the shortcut			
	This is where you enter the functions	This is where you enter the functions			
GRAPHING	you wish to graph regardless of	you wish to graph regardless of			
EDITOR	graph menu selected. You can	graph menu selected. You can			
LDITOR	access the graphing format screen	access the graphing format screen			
	from here.	from here.			
	♦Y= F1 9	$\bullet Y = F1 9$			
	This screen allows you to select a	This screen allows you to select a			
GRAPHING	coordinate system, axes style, grid, coordinate system, axes style				
FORMAT SCREEN	and labels in function mode. When	and labels in function mode. When			
	in mode your selections are	in mode your selections are			
	appropriate to the mode you are in.	appropriate to the mode you are in.			
	$\bullet Y = F6$	$\bullet Y = F6$			
	This menu allows you to choose the	This menu allows you to choose the			
GRAPHING STYLE	style in which a curve will be	style in which a curve will be			
	graphed. Whether a graph is a solid	graphed. Whether a graph is a solid			
	or a dotted line is chosen here.	or a dotted line is chosen here.			
ZOOM OPTIONS	♦Y= F2 ZOOM	♦Y= F2 ZOOM			
	1 ZoomBox	1 ZoomBox			
	Useful to enlarge part of a graph for	Useful to enlarge part of a graph for			
	inspection. When 1 is pressed a	inspection. When 1 is pressed a			
	cursor appears at the origin. Move it	cursor appears at the origin. Move it			
Zoom box	with the arrow keys to where you with the arrow keys to where				
	want a corner of a box. Press want a corner of a box. Pres				
	ENTER to anchor the one corner.	ENTER to anchor the one corner.			
	Use the arrow keys to draw a box to	Use the arrow keys to draw a box to			
	the desired size and press ENTER to	the desired size and press ENTER to			
	redraw the graph to the size of the	redraw the graph to the size of the			
	specified box.	specified box.			
	6 ZoomStd	6 ZoomStd			
Zoom Standard	Returns the calculator to the standard	Returns the calculator to the standard			
	viewing window.	viewing window.			
	7 ZoomTrig	7 ZoomTrig			
Zoom Trig	Sets an approximate viewing	Sets an approximate viewing			
	window of $-3.29\pi \le x \le 3.29\pi$,	window of $-4.96\pi \le x \le 4.96\pi$,			
	$1 \leq y \leq 4$ on a Sal of π and a	$1 \leq y \leq 4$ on a Sal of π and a			
	$-4 \le y \le 4$, an xScl of $\frac{\pi}{2}$ and a	$-4 \le y \le 4$, an xScl of $\frac{\pi}{2}$ and a			
	yScl of 1.	yScl of 1.			
	A ZoomFit	A ZoomFit			
	Will give you a graph which usually	Will give you a graph which usually			
Zoom Fit	includes the features you want to	includes the features you want to			
	examine. It can be used to find a	examine. It can be used to find a			
	good graphing window for a function	good graphing window for a function			
	being examined.	being examined.			

Zoom Dosimal	4 ZoomDec The decimal setting allows the trace	4 ZoomDec The decimal setting allows the trace		
Zoom Decimal	function to show x and y values every .1 unit. The default window is $-7.9 \le x \le 7.9$, $-3.8 \le y \le 3.8$	function to show x and y values every .1 unit. The default window is $-11.9 \le x \le 11.9$, $-5.1 \le y \le 5.1$		
Zoom Square	5 Zoom Sqr Redraws the graph so that the scales on the x- and y-axes are equally spaced for the viewer. This setting will make a circle look like a circle rather than an ellipse.	5 Zoom Sqr Redraws the graph so that the scale on the x- and y-axes are equally spaced for the viewer. This setting will make a circle look like a circle rather than an ellipse.		
Zoom In	2 ZoomIn Allows you to magnify a portion of a graph centered at the cursor.	2 ZoomIn Allows you to magnify a portion of graph centered at the cursor.		
Zoom Out	3 ZoomOut Allows you to examine a larger portion of a graph centered at the cursor.	3 ZoomOut Allows you to examine a larger portion of a graph centered at the cursor.		
	• WINDOW The standard default window is $-10 \le x \le 10, -10 \le y \le 10$. You	• WINDOW The standard default window is $-10 \le x \le 10, -10 \le y \le 10$ You		
GRAPHING WINDOW	can change it to whatever you need. Xscl and Yscl refer to the scales on the axes. You can change them to fit the problem. An Xscl or Yscl of 0 eliminates tic marks from the graph. The larger the xRes number is the rougher the graph will be. The default is 1.	can change it to whatever you need Xscl and Yscl refer to the scales or the axes. You can change them to f the problem. An Xscl or Yscl of 0 eliminates tic marks from the graph The larger the xRes number is the rougher the graph will be. The default is 1.		
♦ ≈	When calculator is set in AUTO mode pressing $\diamond \approx (\diamond \text{ ENTER})$ will change an exact answer into an approximate answer.	When calculator is set in AUTO mode pressing $\diamond \approx (\diamond \text{ ENTER})$ with change an exact answer into an approximate answer.		
GRAPH MATH MENU	From a graph pressing F5 gives you a menu from which you can choose to do things like evaluate the function at a point, find a function maximum or minimum, find a point of intersection, differentiate, integrate, find a point of inflection, find arc length, draw a tangent line to the function at a specified point.	From a graph pressing F5 gives you a menu from which you can choose to do things like evaluate the function at a point, find a function maximum or minimum, find a point of intersection, differentiate, integrate, find a point of inflection, find arc length, draw a tangent line to the function at a specified point.		
TRACE	Selecting F3 from a graph will allow you to trace a function. While tracing if you type a number and press ENTER the calculator will interpret it as an x-value and will give you the corresponding y-value of the function.	Selecting F3 from a graph will allo you to trace a function. While tracing if you type a number and press ENTER the calculator will interpret it as an x-value and will give you the corresponding y-value of the function		

SELECTING TO GRAPH OR NOT TO GRAPH A FUNCTIONFrom the graph you can turn a function on or off for graphing by pressing F4. A function will graph only if it has a \checkmark mark in front of it.From the graph you can turn a function on or off for graphing by pressing F4. A function will graph only if it has a \checkmark mark in front of it.CATALOGCATALOG If you can't find what you want in a pull down menu you can probably find it in the catalog. You can jump to a letter by typing the key that letter is above. A very useful feature of the CATALOG is that the syntax for the command is given in the lower left hand corner of the calculator. It is not given when a command is obtained from a pull down menu.From the graph you can turn a function on or off for graphing by pressing F4. A function will graph only if it has a \checkmark mark in front of it.CATALOGCATALOG If you can't find what you want in a pull down menu you can probably find it in the catalog. You can jump to a letter by typing the associated key. A very useful feature of the CATALOG is that the syntax for the calculator. It is not given when a command is obtained from a pull down menu.Inte 2nd key accesses whatever is above another key written in yellow.Znd KEYSThe 2nd key accesses whatever is above another key written in yellow.The 2nd keys access whatever is above another key written in yellow.A FITERENTER is used to execute a command.The alpha key accesses the purple alphabet above the keys. \uparrow alpha will give you an upper case letter, alpha will give you an upp					
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Press EE to access the hidden Press K to access the hidden					
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above. These symbols are also above. These symbols are also		above. These symbols are also	above. These symbols are also		
available through pull down menus. available through pull down menus.		available through pull down menus.	available through pull down menus.		

Throughout these assignments the TI-89 Titanium calculator screens have been used. While the Voyage 200 screens differ slightly from that of the TI-89 Titanium, this difference is not significant enough to merit listing multiple calculator screens for use in doing these assignments. The screens for all calculators are shown below with the major differences noted.

F1™® ▼ £ Alg	F2+ F3+ F4+ ebraCalcOthe	rPrgmIOClear	1 Up	F1+ F2- Tools Alget	+ F3+ F4+ braCa1cOtherF	FS F6 r9m10Clear	it n Up
MCGH	RAD AUTO	FUNC 0/30		МСБН	RAD AUTO	FUNC	0/30

VoyageTM 200

TI-89

The TI-89 screen is configured like that of the TI-92 Plus but is not as wide.

The screen shown is called the home screen. When working with the **TI-89 Titanium** and **Voyage 200** the following areas of the home screen will be referred to. These areas are indicated below.

