

## Quick Casio cfx-9850G probability keystroke guide

- 1 Press  $\boxed{\text{MENU}}\boxed{1}$  to select RUN mode for normal computations.  
Note that, after executing a command with  $\boxed{\text{EXE}}$ ,  $\boxed{\blacktriangleleft}$  and  $\boxed{\blacktriangleright}$  act as replay keys.
- 2  $\boxed{\text{OPTN}}$  provides on-screen menus for many commands. The six function keys,  $\boxed{\text{F1}}$  to  $\boxed{\text{F6}}$  at the top of the keyboard execute the corresponding on-screen commands. For example,  $\boxed{\text{OPTN}}\boxed{\text{F1}}$  (LIST) puts the List menu on the screen.  $\boxed{\text{F6}}$  turns the page. Pressing  $\boxed{\text{EXIT}}$  backs up the (heirarchical) menus.
- 3 Probability commands appear with  $\boxed{\text{OPTN}}\boxed{\text{F6}}\boxed{\text{F3}}$  (Prob) .  $\boxed{\text{F4}}$  (RAN#) generates random numbers uniformly on (0,1).  
Then  $\boxed{\text{F6}}$  turns the page to access normal distribution menu commands.
- 4 The Integer command is accessible with  $\boxed{\text{OPTN}}\boxed{\text{F6}}\boxed{\text{F4}}$  .
- 5 Pressing  $\boxed{\text{EXE}}$  repeatedly has the effect of repeating the previous command. So, after entering the command  $\text{Int}(6\text{Ran}\# + 1)$ , each successive press of  $\boxed{\text{EXE}}$  will simulate another roll of a standard die.
- 6 Press  $\boxed{\text{MENU}}\boxed{7}$  to select TABLE mode for tabulation.  
Enter a function. Press  $\boxed{\text{F5}}$  (RANG) to enter desired range and then  $\boxed{\text{F6}}$  (TABL) .
- 7 Tables can also be generated in RECUR mode,  $\boxed{\text{MENU}}\boxed{8}$  . Use  $n$  for the variable.  
An automatic cumulation command is then available after  $\boxed{\text{SHIFT}}\boxed{\text{MENU}}$  (SET UP) .
- 8 A column of values in a table can be transferred to a list, for data analysis purposes. First move the cursor to the appropriate column of the table, press  $\boxed{\text{OPTN}}\boxed{\text{F1}}$  (LIST) ,  $\boxed{\text{F2}}$  (LMEM) and then choose the desired list. Be careful: this will *replace* an existing list.
- 9 Press  $\boxed{\text{MENU}}\boxed{2}$  to select STAT mode for data analysis. Press  $\boxed{\text{F1}}$  (GRPH) and then  $\boxed{\text{F6}}$  (SET) to check or change the statistical graphs. For numerical analysis, press  $\boxed{\text{F2}}$  (CALC) and then  $\boxed{\text{F6}}$  (SET) to check or change the variables selected.  
For a histogram, press  $\boxed{\text{SHIFT}}\boxed{\text{MENU}}$  (SET UP) and change to manual graphing with  $\boxed{\text{F2}}$  (MAN) to control histogram construction. Set a viewing window for the histogram with  $\boxed{\text{SHIFT}}\boxed{\text{F3}}$  (V·Window) .
- 10 To retrieve a variable from the table or function list, press  $\boxed{\text{VARS}}\boxed{\text{F4}}$  (GRPH) and then use  $\boxed{\text{F1}}$  (Y) to name the variable. (E.g. Y1, Y2, etc...)

## Quick Casio cfx-9850G Plus statistical inference guide

The Plus models of the Casio cfx-9850G range include facilities for hypothesis testing, confidence interval construction and probability distribution tables. Press **MENU** **2** to first select STAT mode.

### Hypothesis testing

**1** **F3**(TEST) accesses various hypothesis tests:  $z$ ,  $t$ ,  $\chi^2$ ,  $f$  and ANOVA. The  $z$  and  $t$  tests deal with either one-sample or 2-sample cases, while the  $z$ -tests also handle proportions. ANOVA tests are one-way only, with up to six treatments. Each test requires different kinds of data different calculator operations. However, there are enough similarities to describe them in general here.

**2** After selecting the appropriate test, a menu appears. First, identify the data:

For  $z$  and  $t$  tests, the data can be either in the form of **F1**(List) already stored in the calculator or **F2**(Var) to input variables, in the form of summary statistics, if the original data are not to be used.

For the  $\chi^2$  test, the matrix of observed frequencies must be given. Enter the data in a matrix before conducting the test. Press **MENU** **3** to select MAT mode to do this.

In the case of ANOVA, identify the number of treatments.

**3** Move the **▼** cursor down the menu and choose or insert the appropriate test specifications, including the names of the data lists where necessary.

**4** The final item in the list will conduct the test. Choose **F1**(CALC) for a numerical report or **F6**(DRAW) for the associated probability drawing.

### Confidence Intervals

**5** **F4**(INTR) accesses confidence intervals for  $z$  and  $t$  tests. These operate in a similar fashion to the  $z$  and  $t$  hypothesis tests. Identify the data, and specify the confidence level ( $0 < C\text{-Level} < 1$ ) and any other test specifications then press **F1**(CALC) to get the left and right endpoints of the confidence interval and other statistical data.

### Probability Distributions

**6** **F5**(DIST) accesses probability values for normal, Student's  $t$ , Chi squared,  $F$ , Binomial, Poisson and geometric distributions. (It is necessary to first turn the page with **F6** to access the last two of these.) Both probability densities (pd) and cumulative distributions (cd) are available.

**7** After selecting a normal,  $t$ ,  $\chi^2$  or  $F$  distribution, enter the necessary parameters and statistics into the resulting menu. Move the cursor down to Execute and press **F1**(CALC) to generate the required probability. Press **EXIT** to return after the result is displayed. The normal probabilities also include inverse normal tables.

**8** For the binomial, Poisson and geometric probabilities, there is also an option to input a set of values. Choose **F1**(List) to do this or **F2**(Var) to find the probability associated with a single value only. If the List option is chosen, the results will be reported as a scrollable list. If you want to save this list, return to RUN mode with **MENU** **1**, first retrieve it with **OPTN** **F1** **F1**(List) followed by **SHIFT** **(-)**(Ans). It can then be stored in the usual way.