Chapter 25
Date and Time Functions

In this Chapter we demonstrate some of the functions and calculations using times and dates.

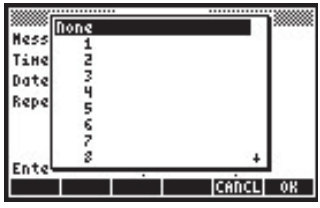
The TIME menu

The TIME menu, available through the keystroke sequence [↱] [TIME] (the 9 key) provides the following functions, which are described next:

Setting an alarm

Option *2. Set alarm..* provides an input form to let the user set an alarm. The input form looks like in the following figure:

The Message: input field allows you to enter a character string identifying the alarm. The Time: field lets you enter the time for activating the alarm. The Date: field is used to set the date for the alarm (or for the first time of activation, if repetition is required). For example, you could set the following alarm. The left-hand side figure shows the alarm with no repetition. The right-hand figure shows the options for repetition after pressing [CHOOS]. After pressing [OK] the alarm will be set.



Browsing alarms

Option *1. Browse alarms…* in the TIME menu lets you review your current alarms. For example, after entering the alarm used in the example above, this option will show the following screen:

This screen provides four soft menu key labels:

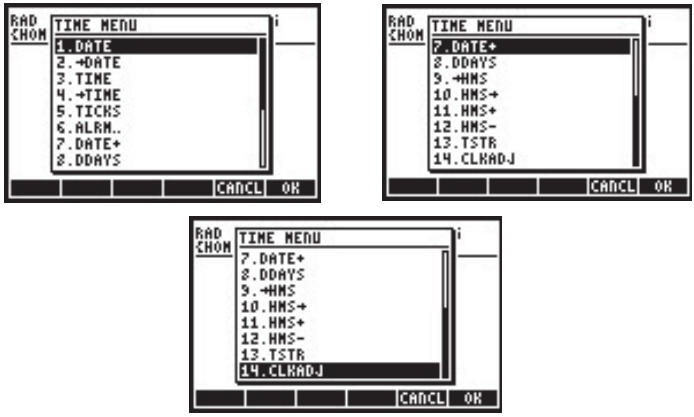
EDIT: For editing the selected alarm, providing an alarm set input form
NEW: For programming a new alarm
PURG: For deleting an alarm
OK : Returns to normal display

Setting time and date

Option *3. Set time, date…* provides the following input form that let's the user set the current time and date. Details were provided in Chapter 1.

TIME Tools

Option *4. Tools…* provides a number of functions useful for clock operation, and calculations with times and dates. The following figure shows the functions available under TIME Tools:

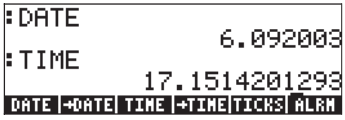


The application of these functions is demonstrated below.

DATE: Places current date in the stack
→DATE: Set system date to specified value
TIME: Places current time in 24-hr HH.MMSS format
→TIME: Set system time to specified value in 24-hr HH.MM.SS format
TICKS: Provides system time as binary integer in units of clock ticks with 1 tick = 1/8192 sec
ALRM..: Sub-menu with alarm manipulation functions (described later)
DATE+: Adds or subtract a number of days to a date
DDAYS(x,y): Returns number of days between dates x and y
→HMS: Converts time from decimal to HH.MMSS
HMS→: Converts time from HH.MMSS to decimal
HMS+: Add two times in HH.MMSS format
HMS-: Subtract two times in HH.MMSS format
TSTR(time, date): Converts time, date to string format
CLKADJ(x): Adds x ticks to system time (1 tick = 1/8192 sec)

Functions →DATE, →TIME, CLKADJ are used to adjust date and time. There are no examples provided here for these functions.

Here are examples of functions DATE, TIME, and TSTR:

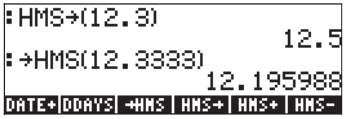


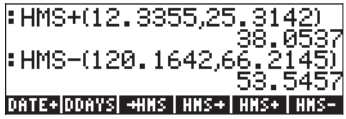
Calculations with dates

For calculations with dates, use functions DATE+, DDAYS. Here is an example of application of these functions, together with an example of function TICKS:

Calculating with times

The functions →HMS, HMS→, HMS+, and HMS- are used to manipulate values in the HH.MMSS format. This is the same format used to calculate with angle measures in degrees, minutes, and seconds. Thus, these operations are useful not only for time calculations, but also for angular calculations. Examples are provided next:





Alarm functions

The sub-menu TIME/Tools…/ALRM… provides the following functions:

The operation of these functions is provided next:

ACK: Acknowledges past due alarm
ACKALL: Acknowledges all past due alarms
STOALARM(x): Stores alarm (x) into system alarm list
RCLALARM(x): Recalls specified alarm (x) from system alarm list
DELALARM(x): Deletes alarm x from system alarm list
FINDALARM(x): Returns first alarm due after specified time

The argument x in function STOALARM is a list containing a date reference (mm.ddyyy), time of day in 24 hr format (hh.mm), a string containing the text of the alarm, and the number of repetitions of the alarm. For example, `STOALARM({6.092003,18.25,"Test",0})`. The argument x in all the other alarm functions is a positive integer number indicating the number of the alarm to be recalled, deleted, or found.

Since the handling of alarms can be easily done with the TIME menu (see above), the alarm-related functions in this section are more likely to be used for programming purposes.