TEXAS INSTRUMENTS

TI Apps Demonstration:

CellSheet™ App
For the TI-83 Plus and TI-83 Plus Silver Edition
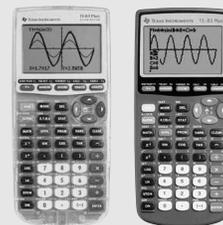
How Much Do You Weigh on Jupiter?
Or, The Effects of Gravity on Weight

This App combines the power of a computer spreadsheet with the portability and versatility of the TI-83 Plus or TI-83 Plus Silver Edition. Spend less time in computer lab and extend the functionality of the handheld into other classes (for example, Business and Social Science). Create cell formulas using normal handheld functions and analyze spreadsheet data by using built-in plotting and statistics capabilities. Import and export variables, lists, and matrices and save spreadsheet files for future use. Import and export data from Excel®.

```
CellSheet Help V0.91
= .......................... STO▶
$ ........................... RCL
Select Range ....... F1
Cut ........................ F2
Copy ..................... F3
Paste ................... F4
Menu .................... F5
Grab Cell ............. APPS
    Press Any Key
```

1

Choose CellSheet from the APPS menu. A Splash screen will pop up first. Press any key to move into the App. Do not press [2nd][QUIT] as this closes the App.

```
S01    A    B    C
 1
 2
 3
 4
 5
 6
A1:            [Menu]
```
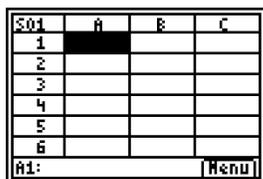
2

Press any key to access the spreadsheet. The edit line with the cell reference is on the left side and the Menu soft key is above [F5].

```
NEW...
Old:S01
New:WEIGHT▯
```

3

If the spreadsheet that opens already has contents, start a new spreadsheet. Press [F5] to access the menu, choose 1:File, and choose 3:New. Type in the name WEIGHT and press [ENTER]. Only the first four letters of the name appear in the top left cell.

```
WEI    A       B    C
 1   PLANET
 2   M
 3   V
 4   E
 5   M
 6   J
B1: "GRAV
```
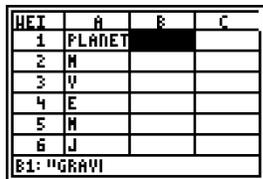
4

Scroll to cell A1.Type the word "PLANET." In cells A2 through A10, type in the first letter of each of the planets in order from the sun (M, V, E, M, J, S, U, N, P). Make sure to put a quotation mark in front of each of these labels so that CellSheet understands them as text rather than variables.

```
WEI    A       B      C
 1   PLANET  GRAV
 2   M        .38
 3   V        .91
 4   E        1
 5   M        .38
 6   J        2.54
A1: "PLANET        [Menu]
```
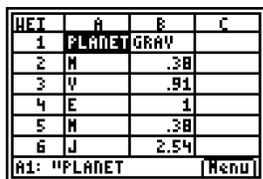
5

Scroll to cell B1. Type in the word "GRAV," for gravitational factor relative to Earth. In cells B2 through B10, put the following factors of the other planets' gravities relative to the Earth's.

```
WEI    A    B      C
 6   J       2.54
 7   S       1.08
 8   U        .91
 9   N       1.19
10   P        .06
11
B11:              [Menu]
```

Planet	Factor		
Mercury	0.38	Jupiter	2.54
Venus	0.91	Saturn	1.08
Earth	1	Uranus	0.91
Mars	0.38	Neptune	1.19
		Pluto	0.06

```
WEI    A       B      C
 1   PLANET  GRAV    WT
 2   M        .38
 3   V        .91
 4   E        1      125
 5   M        .38
 6   J        2.54
C5:               [Menu]
```

6

To determine a person's weight by the different gravitational factors for the planets, scroll to cell C1 and type in "WT for weight. Scroll to cell C4 and type in a sample weight on Earth.

```
WEI    A       B      C
 1   PLANET  GRAV    WT
 2   M        .38    47.5
 3   V        .91
 4   E        1      125
 5   M        .38
 6   J        2.54
C2: =$C$4*B2       [Menu]
```

7

To find a person's weight on Mercury, scroll to cell C2. Enter the formula = $C$4*B2. Remember to use [STO] for = and [RCL] for $. The $ is needed for copying and pasting the formula to other cells without losing the reference to cell C4.

```
WEI    A    B      C
 6   J    2.54    317.5
 7   S    1.08    135
 8   U     .91    113.75
 9   N    1.19    148.75
10   P     .06    7.5
11
C10: =$C$4*B10     [Menu]
```

8

To find the person's weight on Venus, scroll to cell C2. Press [F3] to copy it. Scroll to cell C3 and press [F4] to paste it. Scroll to cell C5 and press [F1] to choose a range to paste to. Scroll to cell C10 and press [F4] to paste to the range C5:C10.

```
WEI    A       B      C
 1   PLANET  GRAV    WT
 2   M        .38    48
 3   V        .91    114
 4   E        1      125
 5   M        .38    48
 6   J        2.54   318
C1: "WT            [Menu]
```

9

This produces a person' weight on Jupiter and all the other planets. In order to quickly see the magnitude of weight on the different planets, change the decimal format of column C. Press [F5] to enter the Menu, choose Options, Col Decimal. Enter C for Col and choose 0 for the decimal format. Press [ENTER], [ENTER] to accept. Column C should now have no decimal points showing so that it is easily seen that a person would weight the most on Jupiter, the least on Pluto.