## TI Connect and the TI-73 Explorer: Installation and Operating System and Application Updates Sarah L. Mabrouk, Framingham State College

download Connect You can the current version of the TΙ software at http://education.ti.com/educationportal/sites/US/productDetail/us ti connect.html: this page has some general information as well as a hyperlink to information about the cable(s) that can be used with the various TI calculators. At the right of the page, below the image of the TI Connect window, there is a pull-Whether you select Windows, down menu on which you can select your operating system. http://education.ti.com/educationportal/appsdelivery/download/download interim.jsp?applicationId=183&c ontentPaneld=7. Mac. or http://education.ti.com/educationportal/appsdelivery/download/download\_interim.jsp?cid=us&displayMode =F&applicationid=286&contentpaneid=7, you will be directed to a page, on which you can select the desired language, here English, and then begin the download process; you must accept the license agreement before you will be able to access the page from which you can access the hyperlink to download the TI Connect software. The page from which you will download the TI Connect software lists the software type, here Windows, and the selected language as well as the version number and the file size.

| Opening ticonnect_eng.exe  | × |  |  |
|--|---|--|--|
| You have chosen to open  |   |  |  |
| iconnect_eng.exe   |   |  |  |
| which is a: Application<br>from: http://education.ti.com               |   |  |  |
| What should Firefox do with this file?                                 | ר |  |  |
| C Open with  |   |  |  |
| Save to Disk   |   |  |  |
| $\hfill\square$ Do this automatically for files like this from now on. |   |  |  |
|  |   |  |  |
| OK Cancel  |   |  |  |

Figure 1: The opening ticonnect\_eng.exe dialog box.

| Enter name of file                                | e to save to  |                   |   |          | ? ×    |
|---|---------------|-------------------|---|----------|--------|
| Save in:  | 🔁 Version 1.6 |                   | • | + 🗈 💣 📰• |        |
| History<br>Desktop<br>My Documents<br>My Computer |               |                   |   |          |        |
| 별<br>말 묘<br>My Network P                          | File name:    | ticonnect_eng.exe |   | •        | Save   |
| My Newolk P                                       | Save as type: | *.exe             |   | <b>v</b> | Cancel |

Figure 2: The enter name of file to save to dialog box.

After you have completed the download steps, the Opening ticonnect\_eng.exe dialog box, Figure 1, will open: select Save it to disk and click Ok. Next, you will need to choose a folder into which to save the file; here, we save ticonnect\_eng.exe in the folder Version 1.6 in My\_Download\_Programs so that the file can be easily found for installation; you will find it helpful to organize your downloaded software.

| 🖟 TI Connect 1.6 Setup | ×   |
|------------------------|---|
|                        | Welcome to the TI Connect 1.6<br>Installation |
| TEXAS<br>INSTRUMENTS   |   |
|                        | Cancel  |

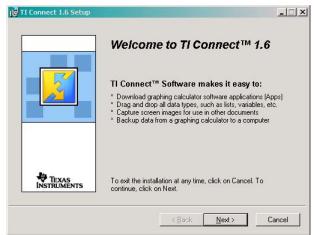


Figure 3: The first TI Connect installation window.

Figure 4: Window providing general information about TI Connect.

After the download is complete, navigate to the folder into which you saved the file and double-click the filename/icon to install the program: installation of the program will begin immediately. You will have the option to cancel the installation by selecting No as displayed in Figure 5. The Texas Instruments PC Software License Agreement window, Figure 6, provides the license agreement for the software; you must choose to accept the license agreement in order to install the software.

| 🔂 TI Connect 1.6 Setup |  | 🔁 TI Connect 1.6 Setup  |
|------------------------|--|---|
|                        | We recommend that you exit all other applications before installing<br>TI Connect 1.5.<br>If you receive a Microsoft <sup>®</sup> warning regarding a driver<br>not being signed, please select 'Continue Anyway' in | Please read the following license agreement. Use<br>the scroll bar to view the rest of this agreement.<br>TI connect"<br>TEXAS INSTRUMENTS PC SOFTWARE LICENSE  |
|                        | order for your Texas Instruments Education Software to<br>install properly.  |   |
|                        | TI Connect version 1.6 provides advanced communications<br>capabilities that may require an update to your TI device's   | By downloading the software and/or documentation you agree to abide<br>by the following provisions.   |
| Ja-                    | Operating System. (You can update using TI DS Downloader following installation.)  | 1 License: Subject to your payment of any applicable license fee, Texas<br>Instruments Incorporated ("TI") grants you a license to copy and use the<br>software program(s) and documentation from the linked web page or CD<br>ROM ("Licensed Materials"). In addition to the copy resident on your |
| INSTRUMENTS            | Do you want to continue installing TI Connect version 1.6?   | <ul> <li>I accept the license agreement</li> <li>I do not accept the license agreement</li> </ul>   |
|                        | <u>Y</u> es No   | < <u>Back</u> <u>Next</u> Cancel  |

Figure 5: General information about TI Connect 1.6 installation.

Figure 6: The TI PC Software License agreement.

Next, Figure 7, you select the location to which the program files are to be saved; you can check the disk cost as well. The next installation window allows you to check the folder location that you have selected. If you choose to change the folder location or folder name, you can select Back to go back to the previous window and make any desired changes.

| 🔂 TI Connect 1.6 Setup  | _ 🗆 🗙 | 🛃 TI Connect 1.6 Setup |   |
|---|-------|------------------------|---|
| Please verify or change the TI Connect destination location according to your<br>preference.  |       |                        |   |
| Destination Folder C:\Program Files\TI Education\ Browse  |       |                        | We now have enough information to install TI Connect 1.6 on this<br>computer.<br>To begin the installation, click on Next. To review or change any<br>of the installation information, click on Back. |
| Disk Space<br>Click the Disk Cost button to see the disk space required to <u>Disk Cost</u><br>install this product.<br>To continue, click on Next. |       | TEXAS<br>INSTRUMENTS   | Current Settings<br>Folder: C:\Program Files\TI Education\<br>Start Menu: TI Tools  |
| < <u>B</u> ack <u>N</u> ext> C  | ancel |                        | <back next=""> Cancel</back>  |

Figure 7: Select the program file and check the disk cost.

Figure 8: Check the selected folder location.

It is important to mention that it is best to use the program selected folder rather than saving the program in another folder: some programs have been set up to run best within the Program Files folder. However, if you have already used the folder TI Education in the Program Files folder for some other non-TI software, it might be best to choose another folder name in the Program Files folder.

Upon clicking Next, the program will install; you can monitor the installation program using the progress bar in the installation window, Figure 9. When installation is complete, you can choose to view the program ReadMe file; since this file is stored in the program file, you can view the ReadMe file later.

Now, we are ready to start the program. Figure 11 displays the TI Tools menu on the Windows Program Menu. We need to connect the calculator using the cable, here the USB cable, to the computer and let

Windows detect and install the device; it is important to make sure that the cable is properly attached to the computer and to the calculator in order for the program to detect the connection location.

In order to establish the device connection, open the TI DeviceExplorer and allow the program to detect the calculator; if you have any problem in establishing the connection, there is a help facility available. Once the connection between the calculator and the computer has been established, the information will be displayed in the TI DeviceExplorer window, Figure 12.

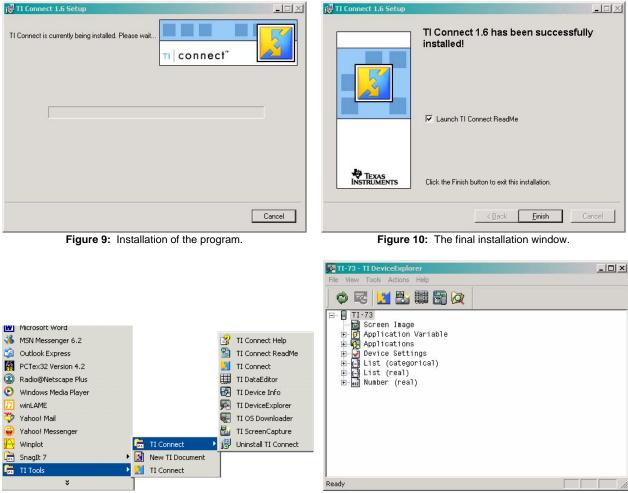


Figure 11: The TI Tools menu on the Windows Program Menu.

Figure 12: The TI DeviceExplorer window.

The TI DeviceExplorer window can be accessed from the TI Connect program window, Figure 13; all components of TI Connect can be accessed from the TI Connect program window.

Examining the TI DeviceExplorer window, Figure 12, we see that we can examine all the applications available on the calculator as well as the lists, in this case both categorical and quantitative, and quantitative variables currently in use. If the TI DeviceExplorer does not automatically search for your calculator when you first activate it, you may use the Select Device option on the Actions menu in the TI DeviceExplorer or the Select Device option on the Actions menu in the TI DeviceInfo icon in the main TI Connect window, to begin the process.

You may use TI DeviceInfo icon in the main TI Connect window to open the TI DeviceInformation window. The TI DeviceInformation window provides information about the operating system and applications on the calculator. The TI DeviceInformation window, Figure 15, has three tabs, the first displaying General Information about the calculator (the device id, the operating system version, bios version, language, the total RAM, the available RAM, and the battery status), the second providing a list of installed applications on the calculator, and the third, the ID List, provides the ID number for the calculator.

| Home Content<br>Tools   | TI Online Updates  | ті с            | connect                |  |                            |                              |
|---|--|-----------------|------------------------|--|----------------------------|------------------------------|
|   |  | <u> </u>        | 1.6                    | Select TI  | Device                     |                              |
|   |  |                 | 1.6                    | Port   | Cable                      | Device                       |
|   |  |                 |                        | USB 1  | USB Silverlink Cable       | TI-73                        |
|   |  |                 |                        | COM3   |                            |                              |
| TI DeviceExplorer   | TI <u>S</u> creenCapture <u>B</u> ackup  | <u>R</u> estore | TI Data <u>E</u> ditor | COM1   |                            |                              |
|   | 67   |                 |                        |  |                            |                              |
|   | 2  |                 |                        | Searchin   | <b>I</b>                   |                              |
| TI Deviceļnfo   | Explore<br>My Ti Data  |                 |                        |  | -                          |                              |
|   |  | /               |                        | Please er  | nsure your device is secur | ely connected and turned ON. |
| TEXAS   |  | /               | 00                     |  |                            |                              |
| INSTRUMENT  | S  |                 | Options Help           | Refr   | esh                        | Select Cancel                |
| F   | igure 13: The TI Conr  | nect Window     | W.                     |  | Figure 14: Select          | TI Device Window             |
| -   | .g   |                 |                        |  |                            |                              |
| 🛃 TI DeviceInfor  | mation   |                 | ×                      |  |                            |                              |
| File Actions Help   |  |                 |                        |  |                            |                              |
| The Actions Their   | )  |                 |                        |  |                            |                              |
|   |  | Dlist           |                        | FI Backup  |                            | ×                            |
| General Informatio  | n Installed Applications   1   | D List          |                        |  | 3                          |                              |
|   |  | D List          |                        | Current Device: TI-7   |                            | Select Device                |
| General Informatio  | n Installed Applications   1   | D List          |                        | Current Device: TI-7<br>Select data to backup  |                            |                              |
| General Informatio  | n   Installed Applications   I<br>TI-73  | D List          |                        | Current Device: TI-7<br>Select data to backup<br>I BAM                                       |                            |                              |
| General Informatic<br>Device Type:<br>Device ID:  | n Installed Applications I<br>TI-73<br>02076-243F1-57B3  | D List          |                        | Current Device: TI-7<br>Select data to backup<br>I   |                            |                              |
| General Informatio<br>Device Type:<br>Device ID:<br>OS Version:   | n Installed Applications I<br>TI-73<br>02076-2A3F1-57B3<br>1.60  |                 |                        | Current Device: TI-7<br>Select data to backup<br>I BAM                                       |                            |                              |
| General Informatic<br>Device Type:<br>Device ID:<br>OS Version:<br>BIOS Version:  | Installed Applications   I     TI-73     02076-2A3F1-57B3     1.60     1.00  |                 |                        | Current Device: TI-7<br>Select data to backup<br>I   | x                          | <u>S</u> elect Device        |
| General Informatio<br>Device Type:<br>Device ID:<br>OS Version:<br>BIOS Version:<br>Language:<br>Total RAM:                   | n Installed Applications I<br>TI-73<br>02076-2A3F1-57B3<br>1.60<br>1.00<br>English (United States of A<br>N/A              |                 |                        | Current Device: TI-7<br>Select data to backup<br>I BAM<br>Achive<br>Apps<br>Estimated backup | x<br>size: 4434 Bytes      | <u>S</u> elect Device        |
| General Informatic<br>Device Type:<br>Device ID:<br>OS Version:<br>BIOS Version:<br>Language:<br>Total RAM:<br>RAM Available: | Installed Applications I<br>TI-73<br>02076-2A3F1-57B3<br>1.60<br>1.00<br>English (United States of A<br>N/A<br>24095 Bytes |                 |                        | Current Device: TI-7<br>Select data to backup<br>I BAM<br>Achive<br>Apps<br>Estimated backup | x                          | <u>S</u> elect Device        |
| General Informatio<br>Device Type:<br>Device ID:<br>OS Version:<br>BIOS Version:<br>Language:<br>Total RAM:                   | n Installed Applications I<br>TI-73<br>02076-2A3F1-57B3<br>1.60<br>1.00<br>English (United States of A<br>N/A              |                 |                        | Current Device: TI-7<br>Select data to backup<br>I BAM<br>Achive<br>Apps<br>Estimated backup | x<br>size: 4434 Bytes      | <u>S</u> elect Device        |
| General Informatic<br>Device Type:<br>Device ID:<br>OS Version:<br>BIOS Version:<br>Language:<br>Total RAM:<br>RAM Available: | Installed Applications I<br>TI-73<br>02076-2A3F1-57B3<br>1.60<br>1.00<br>English (United States of A<br>N/A<br>24095 Bytes |                 |                        | Current Device: TI-7<br>Select data to backup<br>I BAM<br>Achive<br>Apps<br>Estimated backup | x<br>size: 4434 Bytes      | <u>S</u> elect Device        |

Figure 15: The TI DeviceInformation.

Figure 16: The TI Backup window.

Before you update the operating system for your calculator, you should backup the files/data and applications on your calculator. You may initiate a device backup from either the Actions menu in the TI DeviceExplorer window or the main TI Connect window.

| Transferring  |        |
|---------------|--------|
| CBL/CBR       |        |
| CBL_CBR.73k   |        |
| File 17 of 19 |        |
| Ð             |        |
|               |        |
| 0%            | 100%   |
|               | Cancel |

Figure 17: The Transferring files window.

Figure 16 displays the TI Backup window and Figure 17 displays the progress window for backing up the files/data and applications; if you have a lot of data and programs stored on your calculator, be patient since the backup process may take some time.

Once you have completed the back up, you can use the Updates button in the TI Connect window or the Updates option on the Actions menu in the TI DeviceExplorer to search for updates for your calculator. The backup allows you to restore any data that or special applications that you had saved on or downloaded to your calculator; if you have saved the original application files, you can reinstall them if there is any problem restoring them after the completion of the update. After updating the operating system, you can restore any data that you need and restore any special applications that you added or restore any missing applications.

Upon initiating the TI Update, the TI Update window opens: you can select the types of updates that you would like to download, Figure 18. The new versions of any selected items from the last window, for example the operating system or applications, are listed: you select the updates that you would like to download and then left-click the Continue button. Then, TI Connect searches for available updates for the calculator. In this case, Figure 19, a new operating system is available. We select the Operating System by placing a check in the corresponding box and select to download the update directly to the device or to be saved on the computer.

It is best to save the download directly to one's computer so that the calculator is not damaged if the download connection is disrupted. In addition, if you have several calculators that must be updated with the same operating system or applications, you will be able to update all of them at the same time.

|   | 11 Updates 🗙   |
|---|--|
|   | Newer versions of the software are available. There is no charge to update your software.  |
|   | Please select the items you would like to update:  |
| TI Updates X  | □ I Device OS Updates (requires login) □ I TI-73 Explorer(tm) Operating System 1.90 (539.65 KB)  |
| This activity will check for updates to TI software installed on your<br>computer or on your connected TI device.   |  |
| Before clicking Continue, please verify you have an active Internet<br>connection, and your device is connected and turned on if you<br>select device applications.   |  |
| Please select all desired actions   |  |
| <ul> <li>✓ TI Computer Software applications</li> <li>✓ TI Device applications</li> <li>✓ Device Derating System</li> <li>✓ Purchased Apps for this device</li> <li>✓ Free Apps installed on this device</li> </ul> | Total download size: 533.65 KB Select update action(s) Download to my device Save to my computer: C:\Documents and Settings\laptop\My Documents\MyTiData\D |
| Cancel  | Continue   |

Figure 18: The TI Updates window.

Figure 19: Select the desired updates.

If you have not created a TI account, you can do so using the Sign In hyperlink at the top right of the Texas Instruments home page, <u>http://education.ti.com/educationportal/sites/US/homePage/index.html</u>. In addition, you can access information about products and downloads, <u>http://education.ti.com/educationportal/sites/US/sectionHome/download.html</u>, from this page as well. From the Downloads page, you can access information about Calculator Software Applications, <u>http://education.ti.com/educationportal/sites/US/nonProductMulti/apps\_latest.html</u>, including updates for the calculator's operating system.

Once you left-click the Continue button in the TI Updates dialog box, Figure 19, you will be asked to login. If you have not set up an account, you can do so at this time. If you have forgotten your account name or

login then you can have your account information emailed to you; you must enter the email address that you used at the time you set up your account and it will be to that email address that your user name and password are sent.

| End User License Agreement   |  |
|--|--|
| This license agreement applies to the following downloads:<br>TI-73 Explorer(tm) Operating System 1.90   |  |
| TEXAS INSTRUMENTS APP SOFTWARE LICENSE AGREEMENT<br>By downloading the software and/or documentation you agree to abide<br>by the following provisions.  |  |
| <ol> <li>License: Texas Instruments Incorporated ("TI") grants you a<br/>license to copy and use the software program(s) and<br/>documentation from the linked web page or CD ROM ("Licensed<br/>Materials"). The Licensed Materials may be copied onto your<br/>calculator. TI grants school personnel a license to copy the<br/>Licensed Materials onto school or student owned calculators</li> </ol> | TI Updates: Download complete  |
| and school employees and students are licensed to use such<br>copies. In addition to the copy resident on the calculator, a<br>single copy may be kept on a computer solely for backup /   | Successfully downloaded the requested file(s) and saved to :<br>C:\Documents and Settings\laptop\My<br>Documents\MvTiData\Downloads\ |
| C I do not accept the terms of the license agreement   | Open <u>F</u> older OK   |

Figure 20: Accept the User License Agreement.

Figure 21: TI Updates Download complete window.

Once you have logged in, the selected updates will be downloaded to the location on your computer that you specified. You will be asked to accept the user license agreement before the download begins; if you do not accept the license agreement then the download will be terminated.

Once we have downloaded the updated operating system to the computer's hard drive, we are ready to install the operating system using the TI OS Downloader, Figure 22, in the TI DeviceExplorer; we access the TI OS Downloader from the Tools menu in the TI DeviceExplorer. For detailed information on the process look up updating with TI OS Downloader in the Help feature.

| Transferring                  |        |
|-------------------------------|--------|
| T173_OS.73u                   |        |
| Operating System              |        |
| File 1 of 1                   |        |
|                               |        |
| <b>.</b>                      | F      |
| 0%                            | 100%   |
|                               |        |
| Device Upgrading, Please wait | Cancel |

Figure 22: Updating with TI OS Downloader.

Figure 22 displays the TI Updates window for updating the Periodic Table Demo; here, the demo was downloaded directly to the calculator.

As you begin the TI OS Downloader, the dialog box will allow you to select the device that you want to update as well as the cable type, Figure 23. The second window in the process, Figure 24, will direct you to remove the batteries from the device and re-install them, to make sure that the device is turned on, and then to start the download process. Be patient, the download process takes time. Do not attempt to

update the operating system or to install applications if you do not have the time to complete the download process since this may damage your calculator.

From the Pick-Up Window page on the Texas Instruments web site, you can find out about freeware and resources available for TI products. The URL for the Pick-Up Window page is <a href="http://education.ti.com/educationportal/appsdelivery/download/download.jsp">http://education.ti.com/educationportal/appsdelivery/download.jsp</a>.

| 🐺 TI OSDownloader 🛛 🗙  | 🐺 TI OSDownloader 🛛 🗙   |
|--|---|
| TI OS Downloader<br>This program will help you download an OS<br>to your TI handheld device.<br>Warning: For the TI-89, TI-92 Plus, and Voyage<br>200, all data including Applications may be lost when<br>upgrading to OS 2.08 or higher. | Locate OS File<br>Please specify the location of the OS file you wish to download.<br>C:\Documents and Settings\laptop\My Documents\MyTiDat |
| TI Communication Settings<br>Please verify that the cable is connected properly and the communication<br>settings are correct.   | Ready to download<br>Please follow these steps to install the Operating System software on your<br>connected TI device.                     |
| Device : TI-73 ▼<br>Cable Type : USB cable ▼   | * Remove the batteries on the device then re-install them.<br>* If the device is off then turn it on<br>* Click the Start Download button.  |
| Port: USB  | <u>Start Download</u>   |
| Help     Back     Next     Cancel       Figure 23: The first window in TLOSDownloader download   | Help Back Cancel  |

download process.

Once you have downloaded the operating system, we can restore the data that we saved when we created the backup for the calculator. Selecting the Restore option on the Actions menu in the TI DeviceExplorer window or the Restore option in the TI Connect window will open the TI Restore dialog box, Figure 25. In the TI Restore dialog box, we can select to restore RAM or the applications that were stored on the calculator; the CBR/CBL applications will not be removed in the operating system update process. Here, we select the RAM since there were no extra applications stored on this calculator.

| TI Restore 🗙   |   |
|--|---|
| Current Device: TI-73 Select Device  |   |
| Select data to restore:  |   |
| ✓ BAM  |   |
|  | TI Device Data Transfer Warning.  |
|  | WindowRange   |
| Estimated restore size: 1017 Bytes Restore C:\Documents and Settings\laptop\My Do\TI73.tig | The above item already exists on the target device.<br>Select the desired action. |
| OK Cancel  | Beplace     Replace All     Rename     Skip     Cancel                            |

Figure 26: The TI Restore dialog box.

process.

Figure 24: The TI Device Data Transfer Warning dialog box.

As RAM is restored, the TI Device Data Transfer Warning dialog box opens to allow us to choose to replace or to skip restoring some of the saved values such as the WindowRange, for example. During the process, the original data and lists are restored to the calculator, ready for use.

Now that the operating system has been updated and the desired RAM has been restored, we can view the updated device information using the TI DeviceInformation window that is opened by left-clicking the TI DeviceInfo icon in the TI Connect window. We can also view the version of the operating system using the calculator: we press the 2<sup>nd</sup> key followed by 0 (MEM is displayed in yellow above the 0 key) and

select option 1 About, to learn "about" the calculator (we do this by pressing 1 or by pressing ENTER if the cursor is positioned on option 1 in the MEMORY menu). The About window, Figure 25, displays the version of the operating system, now version 1.90, the product number, and the ID number; the URL for TI has been updated as well.

| GRAPH EXPLORER SOFTHARE<br>1.90<br>Prod #: 02-0-01-5A<br>Id: 02076-2A3F1-57B3 |
|---|
| Help: education.ti.com  |

Figure 25: The About window on the updated TI-73 Explorer.

Figure 26 contains a list of available free applications for the TI-73 Explorer; each application is listed with the date of its last update. You may also access TI-73 Explorer downloads on the Latest OS and Apps page for the TI-73 Explorer,

http://education.ti.com/educationportal/sites/US/nonProductMulti/apps\_latest.html?bid=2.

| ▼ Free Apps for TI-73 Explorer™            |              |
|--|--------------|
| Item Description                           | Last Updated |
| Area Formulas for TI-73                    | 10/31/2001   |
| Building Perspective                       | 08/05/1998   |
| Explorer Draw                              | 11/06/2003   |
| Geoboard                                   | 04/11/2001   |
| Guess My Coefficients for TI-73 Explorer   | 10/03/2002   |
| Logic Ladder for TI-73                     | 11/14/2001   |
| Math by Hand for TI-73                     | 01/18/2002   |
| Matrices                                   | 10/11/1999   |
| Number Curiosities for TI-73               | 10/05/2001   |
| Number Line                                | 09/18/2000   |
| Probability Simulation for TI-73           | 05/11/2001   |
| Puzzle Tanks                               | 07/24/1998   |
| Rational Number Rampage for TI-73 Explorer | 10/03/2002   |
| SMILE Mathematics for TI-73 Explorer       | 09/24/2002   |
| Safari Search                              | 08/12/1998   |
| StudyCards(tm) for TI-73                   | 06/04/2001   |
| TI-73 Explorer(tm) Operating System        | 02/06/2006   |
| TI-CBL(tm)/CBR(tm) for TI-73               | 05/19/1998   |
| Topics in Algebra for TI-73                | 03/06/2001   |

Figure 26: The list of free applications available for the TI-73 Explorer.

I hope that you found this information for downloading and installing the TI Connect software and for updating the TI-73 Explorer operating system and applications useful. There are more capabilities of the TI Connect software to explore.

Please feel free to contact me, <a href="mailto:smabrouk@frc.mass.edu">smabrouk@frc.mass.edu</a>, if you have any questions.