

Technology Resources for Graduate Students
in the Mathematics Department

September 7, 2007

About This Document

This technology resource file was originally created by Matthew Jackson, and later modified by previous coordinator Ian Price. Thank them for their fantastic work. I changed and added some information according to the latest updates of department facilities.

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September 7, 2007

Contents

1	Introduction	4
2	Resources Outside the Department	4
2.1	E-mail	4
2.2	Unixs Accounts	5
2.3	Dial-up and Wireless Services	6
2.4	Public Labs	6
2.5	Courseweb/Blackboard	7
2.6	my.pitt.edu	8
2.7	Software Licensing Services	8
3	Accounts	8
3.1	Unixs	9
3.2	Archimedes, Fermat and Euler	9
3.3	Hermes	11
3.4	Calculus Server	11
4	Labs	12
4.1	Thackeray 707	13
4.2	Thackeray 624	13
4.3	Thackeray 625	14
4.4	Gardiner Steel Conference Center 126	14
4.5	Other Labs	15
5	Printing	15
5.1	Printers	15
5.2	Multiple Copies	17
6	Software Resources	18
6.1	Mathematics Software	18
6.2	Editors and Word Processing Software	19
6.3	Other Software	20
7	Other Resources in the Department	20
7.1	Ethernet	20
7.2	Telecommunications	20
7.3	Mailing Lists	21

1 Introduction

As graduate students in the Mathematics Department at the University of Pittsburgh, you have a number of computer resources available to you. Some of these resources are available only to students who have a particular need for them. Other resources are available to everyone, but have restrictions on their use. The purpose of this document is to make you aware of the resources that are available to you, and the policies governing their use. This document is not designed to explain how to use these resources. If you have any questions or concerns, please let me know.

2 Resources Outside the Department

As members of the University community, you are automatically given two accounts of university servers. You have 5Mb of file-space on the computer `unixs.cis.pitt.edu` and you have a 50Mb e-mail account. The file space quota can be increased to 10Mb by calling the computer help desk. The number for this is 4-HELP.

These accounts are both administered by Computer Services and Systems Development (CSSD). Both accounts have the same username and password. In order to change your password, or to check your disk quotas, go to `http://accounts.pitt.edu`. It is very strongly recommended that you change your password as soon as it is issued. If you forget your password, you can have it reset. To do this you need to ask, in person, at one of the public labs. You will need to display your ID card.

2.1 E-mail

Your username should have been assigned by now. Your e-mail address is `username@pitt.edu` (the address `username+@pitt.edu` also works). The university mail servers are `smtp.pitt.edu` for outgoing mail and `imap.pitt.edu` for incoming mail. Extensive information on how to use your university e-mail account can be found at `http://www.technology.pitt.edu`. The three most popular ways to access your e-mail are through the e-mail client Mulberry, through the Unix-based e-mail client Pine, and through the university's webmail service (available at `http://my.pitt.edu`).

2.2 Unixs Accounts

As students at the University of Pittsburgh, you automatically have an account on the computer `unixs.cis.pitt.edu`. You cannot directly access the `unixs` computer. Instead, you must use another computer, and log in remotely. You can log in to `unixs` from any computer with internet access, by using the telnet utility. This will create a Unix shell running on `unixs`. To do this, log in (using telnet, or ssh) to `unixs.cis.pitt.edu`. In order to access files stored in your `unixs` space, you need to use an ftp client (such as WS_FTP (for Windows), Fetch (for Macintosh) or ftp (for Unix)). Just specify the server or host name as `unixs.cis.pitt.edu`. If you are using a web browser such as Internet Explorer, you can enter `ftp://unixs.cis.pitt.edu` in the URL. You will then be prompted for your username and password.

Another way to access this space is through the AFS system. Most of the Unix based machines on campus (certainly in the Mathematics Department) will display a folder on the Desktop labeled “AFS”. This folder accesses your `unixs` account, treating it as a directory. This makes it possible to run files directly from the account. Your `unixs` account is sometimes referred to as your AFS account.

There are four principal uses for your `unixs` account. The primary thing that most people use it for is storage. You are assigned a 5Mb quota when you register as a Pitt student, but you can have this quota increased to 10Mb by contacting the computer help desk (dial 4-HELP on a campus phone). If you need more space, you should get your advisor to contact the computer help desk.

The `unixs` account can also be used for access to other accounts. You can access your university e-mail account from `unixs`, by using the program pine. Some computers, such the calculus server can only be accessed from university computers, so if you are connecting from a remote site, it can be helpful to first log in to `unixs`, and from there to the secure computer.

Thirdly, you can use the `unixs` computer as a computer, to run programs. Programs that spawn windows (such as Netscape, or xemacs) will require you to run some sort of X-term simulator (such as X-Windows) if you are not logging in from a Unix machine. Other programs can run directly in your `unixs` shell. Examples include L^AT_EX (and the associated utilities, such as dvips and ps2pdf), pico (a text editor) and pine (an e-mail client).

Finally, if you want to set up your own website, you can do it on `unixs`.

If you wish to set up a personal webpage, you should create a directory in the `public` folder called `html`. Put your webpages inside this directory (start with a file called `index.html`). Your web address will be

`http://www.pitt.edu/~username.`

Your `unixsaccount` is given several directories as a default. It is generally best to save all your work in the `private` folder. The contents of the `public` folder can read by other users.

2.3 Dial-up and Wireless Services

The University offers a dial-up service so that you can access the internet from a home computer, through a modem. The information about how to access this service can be found at

`http://www.technology.pitt.edu/network.html`

under the heading “Remote Networking”

Now you can access internet via Wireless in the Thackeray Hall and almost all buildings on campus. To do that, you need your university computer account and pick up the PittNet Complete CD at any campus computing lab or at Software Licensing Services in 105 Bellefield Hall. More details about connection and coverage area, please go to website:

`http://wireless.pitt.edu`

2.4 Public Labs

There are a number of so-called “Public Labs” available around the university. These are computer labs where any members of the university community can have access to a computer. As a result, they are often busy and filled with undergraduates. The labs generally have a mix of Windows, Macintosh and Unix computers. For information about the locations of the different labs, the computers in the labs, and the times that the labs are open, go to

`http://www.technology.pitt.edu/labs_info/lab_benedum.html`

and use the pulldown menu to find information about the other labs. The most useful labs are most likely to be the lab on level 10 of Benedum Hall

(the closest to Thackeray) and the lab in David Lawrence Hall, which is open 24 hours a day, 7 days a week.

In addition to computers the labs have scanners and printers. The printers are not directly accessible. Instead, lab supervisors (generally undergraduate Computer Science students) shuttle printouts from the printers to tables where they can be reclaimed. At peak times, there can be a large crowd in from of this table, as people wait for their printouts. Note that you have a quota of 900 pages per semester on these printers. If you wish to print out large files, you should use the printers in the mathematics department.

The lab supervisors can also help with any technical problems that you may have with the computers in the labs, and can reset your password if you forget it.

2.5 Courseweb/Blackboard

Courseweb (also called Blackboard) is an instructional tool. It is a package of web-based resources and facilities that make it easier to manage a webpage for a course that you are teaching. In order to use Courseweb, you must have an account set up for your course. This is done by contacting the Center for Instructional Development and Distance Education (CIDDE – level 8 of Alumni Hall). In particular, you should e-mail Sandra Shearer (shearer@cidde.pitt.edu).

Before your course can be assigned a Courseweb account, you must be trained. There are a number of training sessions offered each semester. Generally speaking, any mathematics graduate student who has some experience with computers should be able to take the expert level course, which is just two hours.

Courseweb has a number of convenient facilities. The features that I have found most helpful are the group e-mail function (allowing you to send e-mail to all students in a class), the discussion board (where students can post questions about homework and the like) and the file sharing area. This is particularly useful for students in the calculus sequence. You can set up a file sharing area for each lab group. Students can then save their labs in this common area, which makes transferring labs from student to student much easier. Other convenient features of Blackboard include an online grade book (which students can check, so that they can see their grade records) a calender so that students know when homework is due, and lots of file space, so that you can post things like lecture notes, homework solutions,

and practice exams, without running out of room (always a problem on the unixs accounts).

A number of courses on campus use Courseweb, so most of the students will have some familiarity with the system.

You can access the Courseweb system by going to `courseweb.pitt.edu` or from `my.pitt.edu`.

2.6 my.pitt.edu

The `http://my.pitt.edu` portal is an attempt to create a unified “front door” to the university’s online resources. You can access your enrollment status, your grades, and your financial status. A lot of information will be found in **Student Center** in the `my.pitt.edu`. The other main feature of the of the portal is the University’s webmail. This makes it easier to check your mail if you don’t have access to a regular e-mail client like Mulberry. The interface is similar to other webmail systems such as Yahoo and Hotmail.

Now there is link to CourseWeb in the `my.pitt.edu`.

2.7 Software Licensing Services

As students, you are entitled to a wide range of free and discounted software. This is administered by the University’s Software Licensing Services (Bellefield Hall). Among other things, you can get Microsoft Office for free. There is also a CIDDE “Student Toolkit CD” (also free) containing Acrobat Reader 6, Norton Antivirus, and compression, browser, and e-mail software. Go to

`http://technology.pitt.edu/sls_student2/`

for more information.

Regrettably, although they have Mathematica, and a range of statistical software, they do not have licenses for Maple or Matlab.

3 Accounts

There are a number of different computers and servers in the department that you may use at various times. However, a number of these computers require you to have an account before you can use them. The exceptions are

the Windows and Macintosh computers in the department's labs. You can log in to the windows machines as "math", without specifying a password. The Macintosh computers have no facility for logging in – you just sit there and use them.

3.1 Unixs

There is often some confusion concerning the relation between the departments Unix machines (Fedora, Red Hat and CentOS), and the computer `unixs.cis.pitt.edu`. Your username and password for `unixs` give you access to the Unix computers (in the labs in 624 and 707, and in GSCC126). However, these computers are not directly running on `unixs`. Any work that you do on these computers is done locally, just as it would be on a Windows machine. However, the situation is complicated by the fact that the department's Unix computers have a folder labeled AFS, which access your `unixs` filespace. Note however, that not everything that you save when using a Unix computer will be saved in your `unixs` account. The default place to save files is the Home directory. This is on the scratch disk of the computer that you are using, and will be automatically deleted after a few days. To ensure that your files are preserved, you should make sure that they are saved to somewhere in the AFS folder.

Also, if you want to use Pine to check your e-mail from one of these machines, you cannot just open Pine in the shell. The shell is restricted to the local computer. Instead, you must type `ssh unixs.cis.pitt.edu` to open a secure shell to Unixs. (Telnet won't work because of the security protections that the department has put in place.) Once you have done this, you can use Pine as you normally would.

If you want to use windows applications on a CentOS machine, use VM Ware installed on the machine. It is necessary to log-off VM Ware pressing Ctrl + Alt.

3.2 Archimedes, Fermat and Euler

The department is in a transitional phase. Now We have three new servers: `archimedes`, `euler`, and `fermat`. The new `euler` server is a new computer, and not to be confused with the old `euler` server.

Everyone who has an account on the old `euler` server has an account on the new computers. If you do not have an account on the `euler` server,

and you wish to open an account, you should see your advisor (if you are a faculty member, you should e-mail Bill Curry at `support@math.pitt.edu`.) or Carol to get a form to fill. If you have an account, you should see Carol for your password.

The old Euler has been decommissioned, the new server has the hostname `euler.math.pitt.edu`. But you will have to log in to `archimedes.math.pitt.edu` to check your mail with pine. You will not be able to log in to the new `euler.math.pitt.edu` using ssh. Instead, log in to `archimedes.math.pitt.edu` or `bernoulli.math.pitt.edu`.

The server `fermat` is configured so that if you log on to `archimedes`, your home directory will display all your stored files. This means that you should not need to access `fermat` directly. However, if you wish, you may mount your `fermat` directory on any computer. Instructions for doing this are in the documentation on `archimedes`. Your disk quota on `fermat` will be 250Mb (if you are a graduate student) or 1Gb (if you are a faculty member). Information on maintaining a `math.pitt.edu` webpage is also in the documentation.

You can configure any e-mail client (that supports IMAP) to access your `math.pitt.edu` e-mail via `euler`, Instructions for doing this are in the documentation. If you access pine from `archimedes`, this will, by default, connect to your `euler` account.

The new servers can *only* be directly accessed from computers on the mathematics department network. To access them from other computers, you need to use a piping program called "Python". This is a small file than can be downloaded from `archimedes` onto a floppy disk. The instructions are in the documentation. To access the new servers from the mathematics department network, you can use a regular ssh utility (such as "Putty" on Windows "ssh" on Fedora). You can open a file transfer connection on the Fedora computers by using either the command `sftp username@archimedes.math.pitt.edu` or typing `sftp://username@archimedes.math.pitt.edu` in a Konqueror address bar.

To create a file transfer connection on the Windows computers, you should use Cygwin. Open Cygwin, and type

```
sftp://username@archimedes.math.pitt.edu,
```

just as you would in a Unix shell. Files will be transfered to the directory

```
C:\cygwin\home\Math Dept
```

If there are any applications that you think that `archimedes` should support, please e-mail me with your suggestions. Please include some detail about where the application can be found.

If you want to log in to `archimedes` remotely without going through the intermediate step of logging in to `unixs` first, there is a program that you need to install on your remote computer, Instructions for installing it are on `archimedes` in `/usr/local/pitt-math/doc/README.win` for windows users and `/usr/local/pitt-math/doc/README.linux` for linux users.

3.3 Hermes

The Hermes computer is used for research in computational mathematics. If you need access to this computer, your adviser must request that you be given an account. To do this, your adviser can contact either the Computer Coordinator or the Computer System Administrator directly. The amount of disk space that you are allocated depends on your needs. Contact your adviser if you need more than you have. To check your quota, type `fs listquota`.

3.4 Calculus Server

Anyone who is involved with teaching a calculus section will have access to an account set up on the calculus server. An account is created for each section. You will use this account for a number of purposes. Firstly, as you write labs for the students to work on, you post them on the calculus server, in the `Archive/Assignments` directory. When students finish their labs, and submit them, they are saved to the `DropBox` directory. Finally, when you have graded the labs, you upload them again to `Graded/Assignment03` (if you have graded assignment 3, for example). The server will record the times that the assignments are submitted, the current members of the group submitting the assignment, and the grade assigned.

You can also use the calculus server to store files. I have found it helpful in the past, when working with a grader, to ask the grader to keep the master copy of the gradesheet in the `private` folder. This has made it easy to check the students' homework scores quickly, and also to make corrections easily.

The username for the account on the calculus server will be based on the course number. For example, section C of MATH0230 will be `m23c`. The password will be randomized each semester. You should see the department

secretary (Carol) or the undergraduate secretary (Diane) for the passwords. It is probably wise to change the password as soon as possible. To do this, open a Unix shell to the calculus server (by using `ssh`; see below), log in, and use the command `passwd`.

Accessing the account is not always easy. As with the departmental servers, you have three methods to access the calculus server from a campus computer (or via a unix shell). You can access the server with `ssh` (`telnet` will not work). To create a secure shell, use `ssh calculus.math.pitt.edu -l username` where `username` is the username for the account you are trying to access. Or you can use Konqueror and type in

```
fish://username@calculus.math.pitt.edu,
```

you will be prompted for the password. Or you use

```
sftp://username@calculus.math.pitt.edu.
```

After you log in, you can transfer files to and from the calculus server, (Maple worksheets and the like).

One other useful application of the calculus server is to set up webpages for courses. When the students log on to the calculus server (using Konqueror) they will go to the “My Class” section to view the new assignments. On this page is a link to the course webpage. Usually this is a nearly blank page with a couple of dead links. However, you can put up any information that you want here. Just replace the `index.html` file in the `public/html` folder, and create your own website. Students can then access the page directly at `http://calculus.math.pitt.edu/~username`.

Note however, that the calculus server is not available to students from off campus, unless they use the University’s dial-up service. This means, among other things, that they cannot access this webpage except via a university computer. This is not generally a problem for those students who live on campus, or those who use the university’s dial-up service.

4 Labs

One regulation applies to all the labs run by the department: No food or drink is permitted in any of the labs. When you are in GSCC126, it is part of your responsibility to ensure that undergraduates do not bring food or drink into the lab.

4.1 Thackeray 707

The lab in Thackeray Hall 707 is the primary lab for graduate students in the mathematics department. You may use it for any reasonable purpose, but students doing mathematics related work have priority over people playing games or surfing the web.

In the lab, there are currently five computers (homer, scratchy) running Fedora or CentOS (a version of Linux), one (burns) running Red Hat Linux, and two running Windows.

The printer in room 707 is called `hp707`. Some computer cannot print files due to connection problem. Before you print a big file, check it.

At this point, I want to mention a technique that can be quite helpful when you using a computer that is running Fedora or CentOS. Normally with Fedora, the active window is that window that the mouse is hovering over. This makes it very easy to shift between windows. However, if you have a number of windows open, this can be a problem. To change this setting, right-click on the title bar of any window, and pull down to “Configure Window Behavior”. In the left hand panel, select “Focus”, and then use the pull-down menu to select “Click to Focus”. Your computer will now be configured so that the active window remains active until you click on another window.

Graduate students are allowed 24 hour access to this lab. However, if you are leaving the lab unattended after 7:00pm, you should lock the door behind you. If you need the combination for the door, you should see Drew.

4.2 Thackeray 624

The lab in room 624 is primarily for students in the mathematical finance program. However, any graduate student may use it, as long as there are computers available. The lab contains three computers running Fedora, two running Windows, and two MacIntosh’s running MacOS 8.1.

This lab also has a scanner and a printer. The scanner is currently connected to one of the MacIntosh’s, but it is planned that it will soon be connected to one of the computers running Fedora. When this is done, it will be possible to scan to graphics files. However, at the moment, we do not have access to Fedora-compatible text-recognition software, so you will not be able to scan directly to a text file.

The printer is called `hp625`. The reason for this misnomer is that the printer was originally kept in room 625.

An additional feature of room 624 is a telephone. You can use this phone to dial off-campus. To do this first dial 9, then the number that you need (eg. 9-412-555-1234). If you need to call this phone, the number is 4-8135, or (412) 624-8135 from off-campus.

As with room 707, you should lock this lab behind you if you are the last person leaving, after 7:00pm.

4.3 Thackeray 625

The lab in room 625 is devoted to the Hermes server. There are seven computers, all running Red Hat Linux. These computers are only for use by those working in scientific computing, or running large simulations. If you need an account for these computers, you should ask your advisor.

There is also a printer in this room. This printer can only be accessed via the hermes server.

This lab should always be kept locked. You will be given the combination to the room when you are given your hermes account.

4.4 Gardiner Steel Conference Center 126

The lab in GSCC126 is primarily a teaching lab. All sections of calculus (except for some sections of the integrated calculus courses, which are designed for engineering students) will have weekly lab sessions in this lab. The students will generally be working on assigned Maple labs. These labs are downloaded from, and when completed, uploaded to the calculus server. All TA's associated with calculus classes must hold some office hours in this lab.

This lab has a large number of computers, all running Fedora. You may use the lab at any time that it is open, as long as you do not disrupt any class that might be in progress. The computers are equipped with most of the same software as the Fedora computers in room 707. However, there is no printer in GS126, and the computers are not equipped with printer drivers, and so cannot print directly. If you must print, you must work via some other computer that has drivers installed, such as `archimedes`

Whenever this lab is open, there must be a graduate student or faculty member on duty. If there is no one available to supervise the lab, you must lock the door and close up the lab. Because this can be a major disruption to undergraduates who may be working in the lab, it is very important that

you arrive on time to your lab hours. If you are the TA for the last section (6-7p), turn off the lights and lock the door behind you.

4.5 Other Labs

As mentioned above, some sections of calculus (primarily for engineering students) do not have their lab sessions in GSCC126. Instead, they will meet in either GSCC138, or Benedum 621. These labs are exclusively teaching labs. They are equipped with projectors and plasma screens, so that the instructor can integrate computer presentations into a lecture. These labs are equipped with printers.

However, you should not use these labs for your own work. They are for teaching only. If you need access to these labs (if you are teaching in one) you should see Rich Colwell (rrc2@pitt.edu) in engineering (Benedum 620). He will give you permission to access the labs using your university ID card.

5 Printing

5.1 Printers

As graduate students, there are three printers that you have unrestricted access to. These are the printers in room 707 (hp707.math.pitt.edu) and room 624 (hp625.math.pitt.edu) and the black and white printer in room 401 (hp401.math.pitt.edu). Graduate students now have access to room 401. See Drew if you need the combination.

The department also has a color printer available. This printer is called c401.math.pitt.edu, and is in room 401. You may use this printer for any mathematics related work (research or teaching), but not for personal use.

From time to time, the department's printers will run out of paper, or will need more toner. You can replace paper yourself. Just add US letter paper to the paper trays, which are all accessible from the front of the printers. Some paper is generally kept in the labs, but more is available in the copier room (625). Each printer tray will hold a full ream (500 sheets) of paper.

In order to print on these computers, you need to print from a mathematics department computer. You cannot print from a unix shell. To print from a Windows or Macintosh, just print as you normally would, using the

usual print commands. On the Macintosh computers, you can also drag the icon of the file to be printed to the printer icon.

On the Fedora computers, you can print using a sequence of dialogue boxes, similar to the Windows environment. As with all things Unix, however, there is a command-based alternative. If you are in the home shell of one of the Fedora computers, or if you are logged in to euler, you can use the `lpr` (“laser print”) command. The basic syntax for this is:

```
lpr -P printername filename
```

For example, if you wish to print the file `hw1.ps` on the printer in room 707, you would type `lpr -P hp707 hw1.ps`. The `lpr` command only works for postscript and plain text files. If you want to print another file type, you first need to convert it to postscript.

Another option that is frequently useful with the `lpr` command is the option to print several copies of the file. Just add the string `-# n` (where `n` is the number of copies) after the printername, and before the file name. Note that you are not allowed to use this to make large numbers of copies.

Together with the `lpr` command are the commands `lpq` and `lprm`. The `lpq` command lists the files queued for the particular printer. You must use `lpq` in conjunction with a printername. For example, `lpq -P hp625` will return the queue for the printer `hp625`. The `lpq` command only lists files queued from your computer. It is useful to confirm that the file has been sent to the printer, and that the printer is operating. The other application of the `lpq` command is in conjunction with the `lprm` command. The `lprm` command is the command for removing a print job from the queue. To do this, you must know the printername, and the jobnumber of the job you want dequeued. To remove job 345 from the queue for printer `hp401`, you would type `lprm -P hp401 345`. You need to use the `lpq` command to find the jobnumber for a particular job. Departmental policy is that you remove jobs that are unwanted, or which you later queue to another printer.

In addition to the departmental printers, you can also use the printers in the public labs. Generally you would use these printers by using the usual print dialogue boxes in Windows, or the MacOS. If you want to print from the Unix machines in the labs you can use the `lpr` command. The lab supervisors can tell you the names of the printers in a particular lab. Remember that you have a print limit of 900 sheets per semester in the public labs. This limit does not count any printing that you do in the department.

The public labs also have color printers. There is a charge for using these, and you should see the lab supervisors.

5.2 Multiple Copies

As was mentioned above, it is possible to print multiple copies of a file on the departmental printers. However, this is not economic for the department. Instead, in most cases you should print one copy, and then make copies from that. The department's copier room (room 325) has two copiers. The Risograph is a high speed copier, and is designed for making large numbers of copies. Departmental policy is that any time you are making more than 20 sets of copies on the departmental copiers, you must use the Risograph.

The Risograph is ideal for printing large numbers (20 or more) of copies of short documents. To print double sided, print the first page, remove the printed pages, turn them upside down, and put them on the top of the stack of blank paper. Then print the second page. The primary disadvantage of the Risograph is that it cannot sort documents, so if you are making several copies of a multi-page document, you will get all the page 1's next to each other, followed by all the page 2's, and so on.

The solution to this is to use the sorter (also in room 325). This device will allow you to take your stack of page 1's, your stack of page 2's, (and so on, up to the page 10's) and will sort them so that you get sets of pages in sequence. There is no stapler attached to this device, so you must staple the sequential sets of pages manually. If you want to use the sorter, you should ask Carol (room 301) for help with which buttons to press, and in what order.

The second copier in the copier room is a full service (black and white) photocopier. This copier works by scanning all the pages that you wish to copy, and then storing these images on a disk. The copier can easily make multiple copies, and can sort, or staple sort. Double sided copying is also easy. However, in order to use this copier, you must have an account on the copier. Generally, only faculty members are given accounts, so if you need to use the copier, you must get Carol, or someone else to log you on.

Remember that it is departmental policy that you not use this copier if you need to make more than twenty copies of anything.

There are three other options if you need to make copies. All of the university libraries, including the mathematics library on level 4, have photocopiers. These use either coins or your Panther ID cards and cost 15c (for

coins) or 10c (for a panther card). Panther Cards can be reloaded at Panther Central in the Litchfield Towers Lobby with.

If you are making large numbers of copies for teaching purposes (hand-outs, quizzes, exams, etc) and do not want to use the departmental copiers, you can use the Copycat service. Copycat is a university owned copying and printing service. It is located at 246 Scaife Hall (use Desoto St entrance) and 3945 Forbes Ave , across the road from David Lawrence Hall. Carol (in room 301) has authorization forms that you can take to Copycat, so that the department will pay for the copying. Documents can also be bound, or stapled, and printed in a range of colors. You can also use Copycat for personal copying. They charge 8c a page for the first 100 pages, and 5c a page for subsequent pages.

Finally, there is a Kinkos store on Forbes avenue. They provide a range of copying and printing facilities, but you must pay for these yourself.

6 Software Resources

6.1 Mathematics Software

The applications that we use most for teaching are Maple and Matlab. These are installed on all the computers that the department maintains. Euler, and the computers that run Fedora also have Stata, which is a statistical package, and a C++ compiler.

The Windows machines have Microsoft Office installed, which includes Microsoft Excel. The Fedora machines, and euler, are equipped with a spreadsheet program called Gnumeric. These programs are compatible with one another, so you shouldn't have trouble moving across platforms.

The Windows computers in the department are equipped with a package called "College Algebra". This is used in various precalculus courses, and is essentially an assessment tool. Users have individual accounts on a commercial server somewhere, and then have to successfully complete various modules to progress through their courses. Note that the computers in the MAC do not have Maple installed, but do have College Algebra.

6.2 Editors and Word Processing Software

The Fedora machines, and euler, have a number of text editors. The most widely used editor is emacs. These computers are also equipped with the \LaTeX mathematical typesetting software. To open a file, type `emacs filename &`. (The “&” tells the computer to return a new prompt in the shell, so that you can keep giving instructions). To create a new file, just go to the directory where you want the file, type

```
emacs filename &
```

Emacs looks at the file extension of a document to see how to treat it. If the file ends in “.tex”, then emacs will assume that the file is a \TeX document, and will display appropriate menus. Likewise, you will get different menus if you open a file ending in “.html” or “.c”.

Companion applications to emacs are “kdvi” (on Fedora) and “xdvi” (on euler). These programs display the graphical dvi file created by running the latex command on a \TeX document. These programs update automatically, so just tex-ing file automatically changes the image.

You can also create pdf files from \LaTeX files. You can do this in one of two ways. The first method is useful when you have a Unix shell (for example, if you are working Fedora or euler.) uses the `dvips` command. This command is used to convert a dvi file to a postscript file. Just typing `dvips filename.dvi` will print the file to the default printer (whatever that may be). However, there are some standard options with `dvips` that are quite useful. One option is `dvips -P printername filename.dvi` which allows you to specify the printer that the file is sent to. However, the relevant option here is `-o filename.ps` which, rather than printing, writes a postscript file to `filename.ps`. You can print a postscript file (from a computer with a printer driver, such as euler, or a Fedora computer) either through the viewer Ghostview, or using the `lpr` command. However, rather than printing a postscript file, you can convert it to a pdf file, using the utility `ps2pdf`. Just type `ps2pdf filename.ps`, and the computer will output a file `filename.pdf`.

If you are using a Windows machine, there is a very quick way to generate a pdf file from a \TeX file. The \LaTeX software that we have installed on the Windows machines is called MikTeX, and includes a utility for converting a \TeX file directly to a pdf file without any intermediate steps. Use the command prompt to go to the directory where your file is kept (generally

c:\ Documents and Settings\Math Dept\My Documents

(you can also go there by using the split window feature in emacs). Type `texify --pdf filename.tex`. This will output a pdf file `filename.pdf` in the same directory. Doing this also creates the supplemental files like `filename.aux` but does not output a dvi or ps file.

Note that the Windows computers also have emacs, and also have a WYSIWYG L^AT_EX front end program called Scientific Workplace. However, the Windows computers do not have `ispell` (the standard emacs spell checker) installed.

6.3 Other Software

The only thing I can think of that need to be noted here is that the Windows machines are equipped with a number of web browsers. In addition to Internet Explorer, “Opera” and “Mozilla Firefox” are both web browsers, with similar functions.

7 Other Resources in the Department

7.1 Ethernet

Most of the offices in Thackeray Hall are equipped with ethernet ports. Some of these are active, and some are inactive. If your office has an active ethernet port, you are welcome to set up your own computer or laptop there. Just contact me to find out the IP number. Note that it is departmental policy to keep track of how many computers are using the department’s ports, so please contact me if you are planning to use the port, even if you already know the IP number.

If your office has a port that is not active (contact me to find out), it can be activated on your advisor’s request. You should ask your adviser to e-mail Bill Curry, and cc the e-mail to me.

7.2 Telecommunications

If you are using a University phone, you need to dial 9 to dial off-campus. If you want to dial on-campus, you just need to pick up the handset, and dial the 5 digit extension.

Some of your offices have telephones, and some do not. If you do not have a phone in your office, and you need to make a call, you have a number of options. You can see Carol in room 301, and ask to use her phone. This is the only way to make long distance calls. If you do this, and the call is not for teaching or research purposes, you will be billed for the call later. The same rules apply to the departmental fax machine.

There is also a phone in the lab in room 624. This phone can be used for local off-campus calls, but not for long distance calls.

Finally, there is a phone in GSCC126. You can only make on-campus calls from this phone.

If someone wants to call you, they can call any of these phones. The numbers are:

Room	From off-campus	From on-campus
Room 301	(412) 624-8375	4-8375
Fax Machine	(412) 624-8397	4-8397
Room 624	(412) 624-8135	4-8135
GSCC126	(412) 624-9847	4-9847

7.3 Mailing Lists

The department maintains a number of e-mail distribution lists. These are useful if you need to e-mail large sections of the department at once. In order to e-mail everyone on a list, just send an e-mail to `listname@math.pitt.edu`, where `listname` is the name of the list. The department maintains the following lists:

<code>gradstudents</code>	Mathematics graduate students
<code>faculty</code>	Full time mathematics department faculty
<code>parttime</code>	Part time teaching faculty and Instructors
<code>postdoc</code>	Mathematics post-doctoral scholars
<code>staff</code>	Departmental support staff
<code>emeritus</code>	Emeritus faculty
<code>undergrad</code>	Undergraduate mathematics majors

You should use your judgement when using these lists. After all, it is never a good idea to spam your advisor. Or the chair of the graduate committee. Or me.