When answering Linux command questions on this side or the back side of this page, refer to the following Inverted Tree diagram. The **linux** directory is contained in your home directory. Assume that you just logged into your **Matrix** account. Directories are underlined.  
  
linux

|-- content

| |-- assignments

| `-- tests

| |-- .answers.txt

| `-- questions.txt

|-- projects

**Questions:**

1. **Write a single Linux command to provide a detailed listing of all files in the /bin directory, sending the output to a file called listing.txt in the “projects” directory.  
   (append output to existing file and use a relative pathname)  
     
     
   ls -l /bin >> ./linux/projects/listing.txt**

**OR**

**ls -l /bin >> linux/projects/listing.txt**

1. **Write a single Linux command to redirect the stderr from the command:  
   cat a.txt b.txt c.txt to a file called error.txt contained in the “assignments” directory.**

**(overwrite previous file’s contents and use only relative pathnames)  
  
cat a.txt b.txt c.txt 2> linux/content/assignments/error.txt**

1. **Write a single Linux command: cat ~/a.txt ~/b.txt ~/c.txt and redirect stdout to a file called “good.txt” to the “tests” directory and stderr to a file called “bad.txt” to the “tests” directory.**

**(overwrite previous contents for both files and use only relative-to-home pathnames)**

**cat ~/a.txt ~/b.txt ~/c.txt > ~/linux/content/tests/good.txt 2> ~/linux/content/tests/bad.txt**

1. **Write a single Linux command to redirect the stdout from the command:  
   cat a.txt b.txt c.txt to a file called wrong.txt contained in the “projects” directory and   
   throw-out any standard error messages so they don’t appear on the screen.**

**(append output to existing file and use only relative pathnames)**

**cat a.txt b.txt c.txt >> linux/projects/wrong.txt 2> /dev/null**

1. **Write a single Linux pipeline command to display a detailed listing of the “projects “directory but pause one screen at a time to view and navigate through all of the directory contents.  
   Use a relative-to-home pathname.**

**ls -l ~/linux/projects | less**

**OR**

**ls -l ~/linux/projects | more**

1. **Write a single Linux pipeline command to display the sorted contents (in reverse alphabetical order) of the “linux” directory. Use a relative pathname.  
     
   ls linux | sort -r**
2. **Assume that the text file called “.answers.txt” contains 10 lines. Write a single Linux pipeline command to only displays lines 5 through 8 for this file. Use only relative pathnames.  
     
     
   tail -6 linux/content/tests/.answers.txt | head -4**

**head -8 linux/content/tests/.answers.txt | tail -4**

1. **Write a single Linux pipeline command to only display the contents of the “assignments” directory whose filenames match the pattern “murray” (both upper or lowercase).  
   Use an absolute pathname.  
     
     
   ls /home/twwong9/linux/content/assignments | grep -i murray**
2. **Write a single Linux pipeline command to display the number of characters contained in the file called “.answers.txt”. Use a relative-to-home pathname.  
     
     
   wc -m ~/linux/content/tests/.answers.txt**
3. **Write a single Linux pipeline command to display the number of lines contained in the file called “questions.txt”. Use a relative pathname.  
     
     
   wc -l linux/content/tests/questions.txt**
4. **Write a single Linux pipeline command to display only the first 10 characters of each filename contained in your current directory. Also, there is will be a lot of output, so also pause at each screenful so you can navigate throughout the display contents. Use a relative pathname.**

ls | cut -c -10 | less