

PRINT Name: \_\_\_\_\_ LAB Section:

Test Version: 473 One-Answer Multiple Choice 305 Questions – 15 of 15%

- ☞ Read **all** the words of these instructions and **both** sides (back and front) of all pages.
- ☞ Use your full, unabbreviated name on the mark-sense form. Do not abbreviate your name.
- ☞ Put the three-digit **Test Version** above into **NO. OF QUESTIONS** and **NO. OF STUDENTS**
- ☞ Fill in the bubbles with pencil only, no pen. Enter your NAME, Test Version, and answers.
- ☞ Manage your time. Answer questions you know, first. One Answer per question.
- ☞ The answer to the questions below about reading/doing all these test instructions is: **Jes**

1. **Did you read all the words of the test instructions on page one?**
  - a. **Igen** (*Yes - Hungarian*)
  - b. **Jes** (*Yes - Esperanto*)
  - c. **Taip** (*Yes - Lithuanian*)
  - d. **Sim** (*Yes - Portuguese*)
  - e. **Tak** (*Yes - Polish*)
2. **My three-digit Lab Section number is:**
  - a. My lab room number, e.g. **B384**.
  - b. The section number of my weekly 2-hour lab period.
  - c. My lecture section number **400** or **410**.
  - d. My lecture room number, e.g. **T130**.
  - e. The Test Version number printed in the top left corner.
3. If file **a** contains 2 lines, and file **b** contains 3 lines, then how many lines are output on your screen by this command line: `cat a | cat b`
  - a. **5**
  - b. **0**
  - c. no output
  - d. **2**
  - e. **3**
4. In an empty directory, what is the output on your screen after this command line: `echo hi >a ; ls >wc -l`
  - a. **1**
  - b. **2**
  - c. **a**
  - d. **0**
  - e. no output
5. Which command below is the best way to find a line containing an asterisk (\*) in the file named **foo**?
  - a. `grep * foo`
  - b. `grep '*' foo`
  - c. `grep foo "*"`
  - d. `grep ./ * foo`
  - e. `grep foo [*]`
6. Given an existing file of yours named **foo**, what is the output on your screen of this command line: `echo hi >foo ; sort foo >foo ; wc foo`
  - a. **1 1 3 foo**
  - b. **0 0 0 foo**
  - c. **2 2 4 foo**
  - d. no output
  - e. **1 1 2 foo**

7. If I am in my HOME directory named **/home/idallen** and **empty** is an empty sub-directory, what is true after this command line: `touch ./pig ; mv ./empty/./pig ../idallen/cow`
  - a. the directory **empty** now contains only a file named **cow**
  - b. there is a second copy of the file **pig** in the file named **cow**
  - c. the command fails because path **../idallen/cow** does not exist
  - d. the directory **empty/..** now has a file named **cow** in it
  - e. the command fails because path **./empty/./pig** does not exist
8. Which of the following command lines removes all the names in the current directory that are exactly three letters (alphabetic) long (and nothing else)?
  - a. `rm ???`
  - b. `rm [a-zA-Z,a-zA-Z,a-zA-Z]`
  - c. `rm [3][3][3]`
  - d. `rm [azAZ][azAZ][azAZ]`
  - e. `rm [a-zA-Z][a-zA-Z][a-zA-Z]`
9. If **foo** is a sub-directory that contains only the file **bar**, what happens after this command: `cp foo/bar ./foo/./me`
  - a. the directory **foo** now contains only a file named **me**
  - b. the command fails because the name **foo/bar** does not exist
  - c. the directory **foo** is now empty
  - d. there is a second copy of the file **bar** in the file named **me**
  - e. there is a second copy of the file **bar** in directory **foo**
10. What is in the file named **file** after this command line: `echo a >c ; echo b >>c ; mv c d >file`
  - a. no such file (nonexistent file)
  - b. **a**
  - c. nothing (empty file)
  - d. **a** followed by **b**
  - e. **b**
11. In an empty directory, what is the output on your screen after this command line: `ls nosuchfile 2>out`
  - a. **nosuchfile**
  - b. **2 not found**
  - c. **nosuchfile 2 not found**
  - d. **nosuchfile not found**
  - e. no output
12. What is the output of this command line in an empty directory: `touch a .a bc .bc def ; echo [ab]*`
  - a. **[ab]\***
  - b. an error message from **echo** saying **[ab]\*** does not exist
  - c. **a bc**
  - d. no output
  - e. **a .a bc .bc**



28. To change your own account password, use this exact command line:
- `$ passwd cst8207.idallen.ca`
  - `$ passwd cst8207`
  - `$ passwd options LOGIN`
  - `$ passwd`
  - `$ passwd root`
29. In a directory that contains only the file **foo**, what happens after this command:
- ```
cp foo bar
```
- the command fails because the name **bar** does not exist
  - there is only the file named **bar** in the directory now
  - an empty file named **bar** is created
  - there is a copy of the file named **foo** in the file named **bar**
  - the command fails because **bar** is not a directory
30. If I am in my HOME directory named **/home/myhome** and **dir** is an empty sub-directory, what is true after this command line:
- ```
touch new ; mv ./dir/./new ../myhome/old
```
- the directory **dir** now contains only a file named **old**
  - the command fails because the path **../myhome/old** does not exist
  - the parent directory of **dir** now has a file named **old** in it
  - the command fails because the path **./dir/./new** does not exist
  - there is a second copy of the file **new** in the file named **old**
31. If my current directory is **/home**, and my HOME directory is **/home/me**, which command copies the password file into my HOME directory under the name **foo**?
- `cp ../../etc/passwd /me/foo`
  - `cp ../etc/passwd ../me/foo`
  - `cp ../home/me/./etc/passwd ./me/./foo`
  - `cp ./me/./etc/passwd ../home/me/foo`
  - `cp ../etc/passwd ./me/foo`
32. In which section of the manual do you find super-user and admin commands?
- 1
  - 8
  - 4
  - 3
  - 2
33. What is the output on your screen of this command line:
- ```
echo cat >out ; echo dog | sort out
```
- cat**
  - dog**
  - dog** followed by **cat**
  - out**
  - cat** followed by **dog**
34. In an empty directory, how many words are in file **out** after this command line:
- ```
touch 1 2 3 2 1 ; ls >out
```
- 6
  - 3
  - 5
  - 0
  - 4

35. How many arguments and options are there to the command:
- ```
ls -li foobar
```
- One argument, no options.
  - Two command line arguments, one of which contains two bundled options.
  - Two arguments, no options.
  - Two options, no arguments.
  - Two arguments, one of which is a single option and the other is a pathname.
36. Which command line displays all the non-hidden names in the current directory that contain the case-insensitive word **me** (and no others)?
- `echo *[me]*`
  - `echo *(M,m,E,e)*`
  - `echo *[MmEe]*`
  - `echo ?[MmEe]?`
  - `echo *[Mm][Ee]*`
37. What is the output of this command line in an empty directory:
- ```
touch .a .b .c ; echo [.]*
```
- no output
  - an error message from **echo** saying **[.]\*** does not exist
  - .a .b .c**
  - [.]\***
  - . . . .a .b .c**
38. How many arguments does the shell pass to this **echo** command:
- ```
echo one two three >four five
```
- 6
  - 5
  - 4
  - 3
  - 2
39. If my current working directory is **/home**, and my HOME directory is **/home/me**, which command copies the password file into my HOME directory under the name **foo**?
- `cp ../home/me/./etc/passwd ./me/./foo`
  - `cp ./me/./etc/passwd ../home/me/foo`
  - `cp ../etc/passwd ../me/foo`
  - `cp me/../../etc/passwd me/foo`
  - `cp ../../etc/passwd /me/foo`
40. What is in the file **bar** after this command line:
- ```
echo hi >x ; echo ho >x ; mv x y >bar
```
- hi**
  - ho**
  - nothing (empty file)
  - no such file (nonexistent)
  - hi** followed by **ho**
41. What is the possible output on your screen of this command line:
- ```
echo wc >date ; sort date >date ; cat date
```
- wc**
  - 1 6 29 date**
  - no output on screen
  - 1 6 28 date**
  - Fri Mar 16 12:00:00 EST 2012**



58. What is the output of this successful command sequence?  
`cd /home/myhome ; mkdir foo ; mkdir bar ; pwd`
- /bar
  - /home/myhome/bar
  - /home/myhome/foo/bar
  - /home/myhome
  - /home/myhome/foo
59. What is the output of this command line in an empty directory:  
`touch .12 .345 .6789 ; echo .??*`
- . . . .12 .345 .6789
  - .??\*
  - an error message from `echo` saying `.??*` does not exist
  - no output
  - .12 .345 .6789
60. Which pathname almost always leads to the same file named: `/etc/passwd`
- `/etc/etc/./passwd`
  - `/etc/passwd/.`
  - `./etc/passwd`
  - `./etc/./passwd`
  - `/etc/./passwd`
61. Which pathname almost always leads to the same file named: `/bin/ls`
- `./bin/./ls/.`
  - `./bin/ls`
  - `/bin/./ls`
  - `/bin/./bin/./ls`
  - `./bin/./ls`
62. In a directory that contains only the file `single`, what happens after this command: `mv single double`
- an empty file named `double` is created
  - the command fails because the name `double` does not exist
  - the command fails because `single` is not a directory
  - there is only the file named `double` in the directory now
  - there is a second copy of the file `single` in the file named `double`
63. Which pathname almost always leads to the same file named: `/etc/shadow`
- `/etc/shadow/./.`
  - `././etc/shadow`
  - `/etc/./././shadow`
  - `/etc/shadow/././.`
  - `./././etc/./shadow`
64. Given the pathname `a/b/c`, the *basename* of this pathname is:
- `c`
  - `a/b`
  - `a`
  - `b`
  - `b/c`
65. What is the output on your screen of this command line:  
`echo hi >hi ; head hi >hi ; wc hi`
- 2 2 4 hi
  - 0 0 0 hi
  - no output
  - 1 1 3 hi
  - 1 1 2 hi

66. If my current working directory is `/var`, which command copies the password file into directory `/var/ian` under the name `bar`?
- `cp ../ian/./etc/passwd ../var/ian/bar`
  - `cp ../../etc/./passwd /ian/bar`
  - `cp ../var/./ian/./etc/passwd ./ian/./bar`
  - `cp ../etc/passwd ../ian/bar`
  - `cp ./ian/../../etc/passwd ian/bar`
67. If I am in my HOME directory named `/home/ian` and `mt` is an empty sub-directory, what is true after this command line:  
`touch ../ian/cat ; cp ./mt/./cat ./mt/./dog`
- there is a second copy of the file named `cat` in the file `dog`
  - the directory `mt` is still empty
  - the directory `mt` now has a file named `dog` in it
  - the directory `mt` now contains two files
  - the command fails because the path `./mt/./cat` does not exist
68. If my current working directory is `/home`, and my HOME directory is `/home/me`, which command copies the password file into my HOME directory under the name `foo`?
- `cp ../etc/passwd ./me/foo`
  - `cp ../home/me/./etc/passwd ./me/./foo`
  - `cp ./me/./etc/passwd ../home/me/foo`
  - `cp ../../etc/passwd /me/foo`
  - `cp ../etc/passwd ../me/foo`
69. Which *CTRL* key will erase a full line of typing in a terminal window?
- `^U`
  - `^D`
  - `^C`
  - `^I`
  - `^R`
70. Which command line lists all possible utilities available for compiling programs?
- `man -k compile`
  - `find compile`
  - `grep 'compile' /etc/`
  - `man compile`
  - `locate compile`
71. What command can you use to delete an empty directory?
- `erase`
  - `deldir`
  - `mvdir`
  - `rmdir`
  - `delete`
72. In an empty directory, what is the output on your screen after this command line:  
`touch a b .1 .2 ; echo .??*`
- an error message from `echo` saying `.??*` does not exist
  - . . . a b .1 .2
  - . . . .1 .2
  - .??\*
  - a b

73. Which command line below outputs only lines 6-10 of the file named **foo**?
- a. `tail -15 foo | head -5`      b. `tail -10 foo | head -6`  
 c. `head -5 foo | tail -10`      d. `head -10 foo | tail -6`  
 e. `head -10 foo | tail -5`
74. If file **/a** contains 7 lines, and file **/b** contains 5 lines, then how many lines are in file **/c** after this command line:
- ```
cat /a /b >/c ; sort /c >/c ; sort /c /a /b >/c
```
- a. 12      b. 5      c. 0      d. 24      e. 7
75. If **foo** is a sub-directory that contains only the file **bar**, what happens after this command: `mv ./foo/bar foo/./moo`
- a. the directory **foo** now contains only a file named **moo**  
 b. there is a second copy of the file named **bar** in the file named **moo**  
 c. the directory **foo** is now empty  
 d. the command fails because the name **moo** does not exist  
 e. the command fails because the name **foo/./moo** does not exist
76. What is the Unix user name for the Super-User account?
- a. **root**      b. **administrator**  
 c. **superuser**      d. **master**  
 e. **alterego**
77. If file **nine** contains 9 lines, each of which is the one-digit line number of the line in the file (1 through 9), what is the output on your screen of this command:
- ```
sort nine nine | tail -3 | head -1
```
- a. 8      b. 2 2      c. 1      d. 8 8      e. 9
78. If file **x** contains ten lines, and file **y** contains twenty lines, then how many lines are in file **cat** after this command line:
- ```
sort x y >z ; tail -5 x >x ; sort x y z >cat
```
- a. 50      b. 60      c. 40      d. 0      e. 55
79. If file **twenty** contains twenty lines, and file **thirty** contains thirty lines then how many lines are output on your screen by this command line:
- ```
tail twenty | cat thirty
```
- a. 30      b. 0      c. 40      d. 50      e. 20
80. The shell expands a leading tilde (~) in a pathname (e.g. **~/foo**) to be:
- a. your HOME directory      b. the directory **/root**  
 c. the parent directory      d. the current directory  
 e. the ROOT directory
81. In an empty directory, how many arguments are passed to the **cat** command in this command line: `touch a1 a2 ac ba .a ; cat a*`
- a. 1      b. none      c. 4      d. 3      e. 2

82. If **ian** is a sub-directory that contains only the file **foo**, what happens after this command: `mv ./ian/./foo ./ian/./bar`
- a. the command fails because the name **./ian/./foo** does not exist  
 b. the command fails because the name **./ian/./bar** does not exist  
 c. the directory **ian** now contains only a file named **bar**  
 d. there is a second copy of the file **foo** in the file named **bar**  
 e. the directory **ian** is now empty
83. Given an existing file of yours named **cat**, what is the output on your screen of this command line: `echo xx >cat ; head cat >cat ; wc cat`
- a. no output      b. 1 1 2 cat      c. 0 0 0 cat  
 d. 1 1 3 cat      e. 2 2 4 cat
84. How many arguments and options are there to the command: `wc -wc wc`
- a. Two options, no arguments.  
 b. Two command name arguments and two bundled options.  
 c. Two arguments, no options.  
 d. Two arguments, one of which is a single option and the other is a pathname.  
 e. Two command line arguments, one of which contains two options.
85. In an empty directory, how many words are in file **foo** after this command line:
- ```
date >.bar >.out ; ls >foo
```
- a. 2      b. 3      c. 1      d. 0      e. 4
86. What is the output of this command line in an empty directory:
- ```
touch .1 .2 .3 4 5 6 ; echo .*
```
- a. an error message from **echo** saying **.\*** does not exist  
 b. **.1 .2 .3 4 5 6**  
 c. **4 5 6**  
 d. **. . . .1 .2 .3**  
 e. **.\***
87. What is the output of this command line in an empty directory: `cat *`
- a. **. ..**  
 b. no output on screen  
 c. **.**  
 d. **\***  
 e. an error message from **cat** saying **\*** does not exist
88. The shell meta-character used to separate multiple separate commands on the same line of typing is:
- a. **;**      b. **+**      c. **,**      d. **:**      e. **@**
89. In an empty directory, how many words are in file **cow** after this command line:
- ```
touch dog dog cat ; ls >cow
```
- a. 1      b. 3      c. 4      d. 2      e. 0

90. If my current working directory is `/home`, and my HOME directory is `/home/foo`, which command copies file `/bin/ls` into my HOME directory under the name `xx`?
- `cp ../home/./foo/./bin/ls foo/xx`
  - `cp ../../bin/./ls /foo/xx`
  - `cp ./foo/././bin/ls ./foo/./xx`
  - `cp ../foo/./bin/ls ../home/foo/xx`
  - `cp ../../bin/ls ../foo/xx`
91. Which of the command lines below can generate a non-empty file?
- `tail -5 foo >foo`
  - `ls foo >foo`
  - `grep -v foo foo >foo`
  - `sort -r foo >foo`
  - `tr abc ABC <foo >foo`
92. What is true about this command line: `date >ls ; ls -ls ls >wc`
- The `wc` command counts the output of the `ls` command.
  - The shell finds and executes three different commands.
  - The file `wc` has one line in it.
  - The `ls` command is executed more than once.
  - The `ls` command receives the output of `date` on standard input.
93. If I am in directory `/home/me` and `mt` is an empty sub-directory, what is true after this command line: `touch foo ; mkdir bar ; mv foo mt/bar`
- the directory `mt` now contains a file named `bar`
  - the directory `mt` now contains a file named `foo`
  - the command fails because `mt/bar` is not a directory
  - the directory `mt` is still empty
  - the directory `bar` now contains a file named `foo`
94. If I am in directory `/home/me` and `mt` is an empty sub-directory, what is true after this command line: `touch ./foo ; mv mt/./foo mt/./bar`
- the command fails because the path `mt/./foo` does not exist
  - the directory `./me` now contains a file named `bar`
  - there is a second copy of the file `foo` in the file named `bar`
  - the directory `mt` now contains only a file named `bar`
  - the command fails because the path `mt/./bar` does not exist
95. If directory `dir` contains these four three-character file names: `.aa`, `.ab`, `.a?`, `.a*`, then what is the output on your screen of this command line: `echo dir/???`
- `dir/.a?`
  - `dir/.aa dir/.ab`
  - `dir/.aa dir/.ab dir/.a? dir/.a*`
  - `dir/???`
  - no output

96. If file `/a` contains 30 lines, and file `/b` contains 50 lines, then how many lines are in file `/c` after this command line:
- ```
cat /a /b >/c ; sort /c >/c ; sort /c /a /b >/c
```
- 0
  - 30
  - 80
  - 160
  - 50
97. If I am in my HOME directory named `/home/ian` and `mt` is an empty sub-directory, what is true after this command line:
- ```
touch ../ian/cat ; cp ./mt/./cat ./mt/./dog
```
- the directory `mt` now contains two files
  - the directory `mt` now has a file named `dog` in it
  - the directory `mt` is still empty
  - the command fails because the path `./mt/./cat` does not exist
  - the file named `cat` is now renamed to `dog`
98. If file `a` contains 20 lines, and file `b` contains 30 lines, then how many lines are in file `out` after this command line:
- ```
cat a b >c ; head c >c ; sort a b c >out
```
- 0
  - 100
  - 50
  - 30
  - 60
99. The option to `ls` that shows which names are directories is:
- `-i`
  - `-d`
  - `-l`
  - `-a`
  - `-1`
100. If I am in directory `/home/me` and `mt` is an empty sub-directory, what is true after this command line:
- ```
touch ./foo bar ; rm mt/./foo ../me/bar
```
- the command fails because the path `../me/bar` does not exist
  - the directory `me` now contains a file named `bar`
  - the directory `mt` is still empty
  - the command fails because the path `mt/./foo` does not exist
  - the directory `mt` now contains a file named `foo`
101. If my current directory is `/etc`, which of these pathnames is equivalent to the file name `/etc/passwd`?
- `passwd/.`
  - `/root/etc/passwd`
  - `../../etc/./passwd`
  - `../etc/passwd/.`
  - `./etc/passwd`
102. In an empty directory, what is the output on your screen after this command line:
- ```
ls 1>/dev/null nosuchfile
```
- `ls: 1>/dev/null nosuchfile: No such file or directory`
  - no output
  - `ls: nosuchfile: No such file or directory`
  - `nosuchfile`
  - `ls: /dev/null: No such file or directory`

103. Which of these statements is true?
- Command **apropos** is an exact synonym for command **man**.
  - The **file** command creates a new, empty file in the current directory
  - To interrupt a Unix process from the keyboard, type **[CTRL]-[D]**.
  - To indicate End-of-File (no more input) to a program, type **[CTRL]-[D]**.
  - To erase an entire line of typing, type **[ALT]-[DELETE]**.
104. If file **/a** contains 20 lines, and file **/b** contains 30 lines, then how many lines are in file **/c** after this command line:
- ```
sort /a /b >/c ; cat /a >>/b ; sort /c /b /a >/c
```
- 50
  - 0
  - 120
  - 80
  - 70
105. What would you type to find the string **tony** in the file **/etc/passwd**?
- string tony /etc/passwd**
  - grep /etc/passwd tony**
  - find /etc/passwd tony**
  - find tony /etc/passwd**
  - grep tony /etc/passwd**
106. Which command pipeline outputs the count of the number of pathnames (including all subdirectories) that lie under the current directory?
- file . | wc**
  - dir / | wc**
  - find . | wc**
  - ls / | wc**
  - ls . | wc**
107. If file **/a** contains 30 lines, and file **/b** contains 50 lines, then how many lines are output on your screen by this command line: **cat /a | sort /b**
- 30
  - 50
  - 20
  - 0
  - 80
108. If my current directory is **/etc**, which of these pathnames is equivalent to the file name **/etc/passwd**?
- ./etc/passwd**
  - ../etc/passwd/.**
  - /passwd**
  - ./passwd**
  - ../passwd**
109. In a directory containing one file named **dog**, what is the output on your screen after this command line: **2>/dev/null ls nosuchfile**
- no output
  - nosuchfile**
  - bash: 2>/dev/null: command not found**
  - dog**
  - ls: nosuchfile: No such file or directory**
110. In an empty directory, how many arguments are passed to the **rm** command in this command line: **touch a a1 a2 ba ca ; rm a\***
- 2
  - 1
  - none
  - 4
  - 3

111. In an empty directory, what happens after this command line:
- ```
touch a b c ; mv a b c
```
- the files **a** and **b** are appended to the file **c**
  - the files **a**, **b**, and **c** are moved to the current directory
  - the files **a**, **b**, and **c** are moved to the directory **c**
  - the files **a** and **b** are moved into the directory **c**
  - an error message: **mv: target 'c' is not a directory**
112. How many lines are in the file **bar** after this command line:
- ```
echo hi >x ; echo ho >>x ; cat x x >bar
```
- 2
  - 1
  - 4
  - 0
  - 6
113. What command shows all the lines in file **cow** that contain the string **pig**?
- grep cow pig**
  - grep pig <cow**
  - grep pig >cow**
  - cat cow > grep pig**
  - grep cat cow pig**
114. The output of the **tree** command is:
- the tree of files under the **ROOT** directory
  - the tree of files under your **HOME** directory
  - a recursive list of users logged in to the system
  - the tree of users logged in to the system
  - an indented, recursive list of directories and their contents
115. What is the result of this exact command line: **cat /foo bar**
- the two text strings **/foo** and **bar** will be displayed
  - the contents of the files **/foo** and **bar** will be displayed
  - all the files under directory **/foo** with the name **bar** will be displayed
  - the names of the pathnames **/foo** and **bar** will be displayed
  - file **/foo** will be copied to **bar**
116. If **/bin/bash** is a file name, which pathname always leads to the same file?
- /bin/./bash**
  - /bin/bash/..**
  - /bin/bash/.**
  - /../bin/bash**
  - ./bin/bash**
117. How many arguments and options are there to the command: **ls -lid /p**
- Two arguments: A file name starting with a dash and a **/p** switch option argument.
  - Two command line arguments, one of which contains three options.
  - Two arguments, one of which is a single option name and the other is a pathname.
  - Two arguments, neither of which is an option.
  - Three arguments, one of which contains options and one is a pathname.
118. Which of these characters is *not* a shell GLOB meta-character?
- ]**
  - [**
  - #**
  - \***
  - ?**

119. In a directory containing one file named **mt**, what is the output on your screen after this command line: `ls 2>/dev/null nosuchfile`
- `ls: nosuchfile: No such file or directory`
  - `bash: 2>/dev/null: command not found`
  - `nosuchfile`
  - `mt`
  - no output
120. What is the output of this command line in an empty directory:
- ```
touch .a .b .c ; echo .*
```
- no output
  - `.*`
  - `. . . .a .b .c`
  - `.a .b .c`
  - an error message from `echo` saying `.*` does not exist
121. In an empty directory, what is the output on your screen of this command line:
- ```
echo hi >foo >bar ; cat foo
```
- `hi >foo >bar`
  - no output
  - `hi >foo`
  - `cat: foo: No such file or directory`
  - `hi`
122. If file `foo` contains 99 lines, each of which is the two-digit line number of the line in the file (01 through 99), what is the output on your screen of this command:
- ```
sort foo foo | tail -4 | head -1
```
- 98
  - 96
  - 04 04
  - 01 01
  - 96 96
123. If my current directory is `/usr`, which of these pathnames is equivalent to the pathname `/usr/x/y/z`?
- `../x/y/z`
  - `./usr/x/y/z`
  - `x../y/z`
  - `../usr/y/z`
  - `/x/y/z`
124. What is the output on your screen of this command line:
- ```
echo pig >one ; echo bat | tail one
```
- `pig` followed by `bat`
  - `pig`
  - `bat`
  - an error message
  - `bat` followed by `pig`
125. How do you search for the word `nongraphic` in the man page for `ls`?
- type `man -k nongraphic` at the shell
  - type `man ls -nongraphic` at the shell
  - type `man ls` at the shell, then `^F` (CTRL-F), then `nongraphic`
  - type `man ls` at the shell, then `/nongraphic`
  - type `man nongraphic | grep ls` at the shell

126. If I am in my HOME directory named `/home/me` and `dir` is an empty sub-directory, what is true after this command line:
- ```
touch new ; mv ./dir/./new ../me/old
```
- the parent directory of `dir` now has a file named `old` in it
  - the command fails because the path `../me/old` does not exist
  - the directory `dir` now contains only a file named `old`
  - the command fails because the path `./dir/./new` does not exist
  - there is a second copy of the file named `new` in the file named `old`
127. The option to `ls` that shows hidden names is:
- `-l`
  - `-h`
  - `-1`
  - `-a`
  - `-i`
128. In an empty directory, what is the output on your screen after this command line:
- ```
date >.foo >.bar ; ls *
```
- `*`
  - `.foo .bar`
  - no output
  - `. .. .foo .bar`
  - an error message from `ls` saying `*` does not exist
129. If file `/a` contains 3 lines, and file `/b` contains 5 lines, then how many lines are output on your screen by this command line: `cat /a | sort /b`
- 3
  - 2
  - 8
  - 0
  - 5
130. What command shows all the lines in file `foo` that contain the string `bar`?
- `foo | grep bar`
  - `cat foo | wc bar`
  - `grep foo bar`
  - `cat foo > grep bar`
  - `grep bar <foo`
131. What command displays the sizes of files in the current directory?
- `cat -s`
  - `ps -s`
  - `ps -l`
  - `ls -l`
  - `ls -p`
132. How many lines are in file `out` after this command line:
- ```
echo hi >dog >out >cat
```
- 2
  - 4
  - 0
  - 3
  - 1
133. What is the output on your screen after this command line:
- ```
mkdir dir ; touch dir/.aa dir/.bb ; echo dir/*
```
- `dir/`
  - `dir/*`
  - `dir/. dir/.. dir/.aa dir/.bb`
  - `dir/.aa dir/.bb`
  - no output

134. If **foo** is a sub-directory that contains only the file **bar**, what happens after this command: **mv foo/bar foo/moo**
- there is only the file named **moo** in the directory now
  - the command fails because **bar** is not a directory
  - there is a second copy of the file named **bar** in the file named **moo**
  - an empty file named **moo** is created
  - the command fails because the name **moo** does not exist
135. If **pig** is a sub-directory that contains only the file **dog**, what happens after this command: **mv pig/dog pig/././cat**
- the directory **pig** now contains only a file named **cat**
  - there is a second copy of the file **dog** in the file named **cat**
  - the directory **pig** is now empty
  - the command fails because the name **cat** does not exist
  - the command fails because the name **pig/././cat** does not exist
136. Which of the command lines below can generate a non-empty file?
- head -l file >file**
  - grep pattern file >file**
  - ls -ls file >file**
  - sort -r file file >file**
  - touch file >file**
137. If the current directory contains 2 visible files and 3 visible sub-directories, what is the output on your screen of this command: **echo \*/.**
- no output
  - \*/.**
  - 3 directory names
  - 5 pathnames
  - 2 file names
138. In a directory that contains only the file **foo**, what happens after this command: **mv foo bar**
- there is a copy of the file named **foo** in the file named **bar**
  - an empty file named **bar** is created
  - the command fails because **bar** is not a directory
  - there is only the file named **bar** in the directory now
  - the command fails because the name **bar** does not exist
139. If directory **cow** contains only these four three-character file names: **.AA**, **.A1**, **.BB**, **.B.**, then what is the output on your screen of this command line: **echo cow/\***
- cow/.B.**
  - no output
  - cow/.AA cow/.A1 cow/.BB cow/.B.**
  - cow/.AA cow/.A1 cow/.BB**
  - cow/\***

140. What is the result of this exact command line: **ls /foo bar**
- file **/foo** will be copied to **bar**
  - the names of the pathnames **/foo** and **bar** will be displayed
  - the contents of the files **/foo** and **bar** will be displayed
  - all the files under directory **/foo** with the name **bar** will be displayed
  - the two text strings **/foo** and **bar** will be displayed
141. In an empty directory, what is the output on your screen after this command line: **ls out 2>/dev/null**
- ls: out 2>/dev/null: No such file or directory**
  - out**
  - no output
  - ls: /dev/null: No such file or directory**
  - ls: out: No such file or directory**
142. How many lines are in the file **out** after this command line: **date >f ; ls f >>f ; cat f f >out**
- 1
  - 0
  - 2
  - 4
  - 6
143. What does *quoting* mean on a shell command line?
- setting the **PS1** variable to be your shell prompt
  - turning off the special meaning of shell meta-characters
  - typing a "control" character using the **[CTRL]** key
  - using more than one pathname argument to a command, e.g. **rm a b c**
  - using a leading tilde ("**~**") on a pathname to mean your HOME directory
144. If I am in my HOME directory named **/home/myhome** and **sub** is an empty sub-directory, what is true after this command line: **touch ./fil ; mv sub/./fil ../myhome/cat**
- the directory **sub** now contains only a file named **cat**
  - there is a second copy of the file **fil** in the file named **cat**
  - the command fails because the path **../myhome/cat** does not exist
  - the command fails because the path **sub/./fil** does not exist
  - the directory **sub/..** now has a file named **cat** in it
145. If **foo** is a sub-directory that contains only the file **bar**, what happens after this command: **mv ./foo/bar foo/./moo**
- the command fails because the name **moo** does not exist
  - the command fails because the name **foo/./moo** does not exist
  - the directory **foo** is now empty
  - the directory **foo** now contains only a file named **moo**
  - there is a second copy of the file **bar** in the file named **moo**
146. What is the output on your screen of this command line: **echo wc >wc ; wc wc >wc ; head wc**
- no output
  - 1 1 2 wc**
  - wc**
  - 0 0 0 wc**
  - 1 1 3 wc**

147. If my current directory is `/lib`, which of these pathnames is equivalent to the pathname `/lib/x/y`?
- `./lib/x/y`
  - `../x/y`
  - `../lib/y`
  - `/x/y`
  - `../lib/x/y`
148. The basic purpose of a shell is:
- to program system administration backup procedures
  - to find and run commands
  - to expand pathnames
  - to search for strings inside text files
  - to format hard drives
149. If `/bin/bash` is a file name, which pathname always leads to the same file?
- `/bin/bin/./bash`
  - `/bin/./bash`
  - `./bin/bash`
  - `/bin/bash/.`
  - `./bin/./bash`
150. Which command below is the best way to find a line containing a question mark (?) in the file `/etc/passwd`?
- `grep ? /etc/passwd`
  - `grep '?' /etc/passwd`
  - `grep ./? /etc/passwd`
  - `grep ? >/etc/passwd`
  - `grep /etc/passwd ./?`
151. What is the output of this successful command sequence?
- ```
cd /home/dir ; mkdir one ; mkdir two ; pwd
```
- `/home/dir/one/two`
  - `/home/dir`
  - `/two`
  - `/home/dir/one`
  - `/home/dir/two`
152. If I am in my HOME directory named `/home/me` and `x` is an empty sub-directory, what is true after this command line:
- ```
touch ./x/file ; mv x/./file x/./././me/./y
```
- the command fails because the path `x/./././me` does not exist
  - the directory `x` is still empty
  - the directory `x` now contains only a file named `y`
  - the command fails because the path `x/./file` does not exist
  - there is a second copy of the file `file` in the file named `y`
153. In the output of the command `ls -a`, a dot (period) that *begins* a name signifies what?
- A name that is hidden.
  - A current file.
  - A name with an unprintable character.
  - The parent directory.
  - The current directory.

154. If my current directory is `/foo`, which of these pathnames is equivalent to the file name `/foo/bar`?
- `../bar`
  - `./bar`
  - `/bar`
  - `./foo/bar`
  - `../foo/bar/.`
155. Given an existing file of yours named `wc`, what is the output on your screen of this command line: `echo hi >wc ; sort wc >wc ; cat wc`
- `2 2 4 wc`
  - `0 0 0 wc`
  - `1 1 2 wc`
  - `1 1 3 wc`
  - no output
156. If I am in my HOME directory named `/home/me` and `mt` is an empty sub-directory, what is true after this command line:
- ```
touch ../me/foo ; cp ./mt/./foo ./mt/./bar
```
- there is a second copy of the file named `foo` in the file named `bar`
  - the directory `mt` is still empty
  - the command fails because the path `./mt/./foo` does not exist
  - the directory `mt` now contains two files
  - the directory `mt` now has a file named `bar` in it
157. Which of the following will *not* cause `file1` to become an empty file?
- `wc file1 > file1`
  - `cat file1 > file1`
  - `sort file1 > file1`
  - `head file1 > file1`
  - `tail file1 > file1`
158. Which Unix command line deletes a directory and everything inside it?
- `rmdir -all dir`
  - `erase -r dir`
  - `rm -r dir`
  - `deltree -all dir`
  - `erase dir`
159. Which of these is the most secure password?
- `apple15`
  - `Canada`
  - `Madonna`
  - `Easy10!`
  - `secrets`
160. What command shows all the lines in file `/etc/group` that contain the string `idallen`?
- `grep idallen </etc/group`
  - `cat /etc/group | wc idallen`
  - `grep /etc/group idallen`
  - `grep idallen >/etc/group`
  - `cat /etc/group > grep idallen`
161. In an empty directory, what is the output on your screen after this command line:
- ```
touch a ; ls >wc -l
```
- `0`
  - `1`
  - `2`
  - no output
  - `3`
162. Which command line does *not* show any lines from inside the file `bat`?
- `ls bat`
  - `sort bat`
  - `less bat`
  - `tail bat`
  - `head bat`

163. How many arguments and options are there to the command:  
`ls -ls /cat`
- A three-letter file name and a `/cat` switch option argument.
  - Two arguments, one of which is a single option and the other is a pathname.
  - Two options, no arguments.
  - Two arguments, no options.
  - Two command line arguments, one of which contains two bundled options.
164. If `/bin/bash` is a file name, which pathname always leads to the same file?
- `../bin/bash`
  - `../bin/./bash`
  - `/bin/bash/.`
  - `/bin/bin/./bash`
  - `/bin/./bash`
165. In an empty directory, what is the output on your screen after this command line:  
`echo hi >a ; ls nosuchfile 2>/dev/null`
- `ls: 2>/dev/null: No such file or directory`
  - `a`
  - `nosuchfile`
  - no output
  - `ls: nosuchfile: No such file or directory`
166. Which command line below outputs only lines 11-15 of the Unix password file?
- `tail -15 /etc/passwd | head -10`
  - `tail -10 /etc/passwd | head -15 /etc/passwd`
  - `head -15 /etc/passwd | tail -5 /etc/passwd`
  - `head -10 /etc/passwd | tail -15 /etc/passwd`
  - `head -15 /etc/passwd | tail -5`
167. Which command pipeline outputs the count of the number of pathnames (including all subdirectories) that lie under the `/etc` directory?
- `ls /etc | wc`
  - `dir /etc | count`
  - `ls /etc ; wc`
  - `find /etc | wc`
  - `man /etc ; wc`
168. In which section of the manual do you find standard commands?
- 1
  - 3
  - 8
  - 4
  - 2
169. If directory `dir` contains these three four-character file names: `.123`, `.124`, `.???`, then what is the output on your screen of this command line:  
`echo dir/????`
- `dir/.123 dir/.124`
  - `dir/????`
  - no output
  - `echo: dir/????: No such file or directory`
  - `dir/.123 dir/.124 dir/.???`

170. Which of the following statements is true about this command line:  
`>foo file bar haven`
- The command `foo` sees three arguments.
  - The command `file` sees three arguments.
  - Error: The command name is missing from the command line.
  - The command `foo` sees only two arguments
  - The command `file` sees two arguments.
171. In the output of `ls -a`, the two-character name `..` signifies what?
- The parent directory.
  - The ROOT directory.
  - A file or directory with double links.
  - It begins every name that is hidden.
  - The current directory.
172. What is the output on your screen after this command line:  
`echo hi >a ; ls a > wc`
- 2
  - 1 1 3
  - 3
  - no output
  - 1 1 2
173. If my current directory is `/etc`, which of these pathnames is equivalent to the file name `/etc/passwd`?
- `./etc/passwd`
  - `passwd`
  - `../passwd`
  - `/passwd`
  - `../etc/passwd/.`
174. Which of these command line will make `bar` contain all of the content of `f1` followed by all of the content of `f2`?
- `mv f1 f2 >bar`
  - `cat f1 f2 >bar`
  - `echo f1 f2 >bar`
  - `cp f1 f2 >bar`
  - `wc f1 f2 >bar`
175. If `foo` is a sub-directory that contains only the file `bar`, what happens after this command: `mv foo/bar foo/moo`
- an empty file named `moo` is created
  - the command fails because `bar` is not a directory
  - there is only the file named `moo` in the directory now
  - the command fails because the name `moo` does not exist
  - there is a second copy of the file `bar` in the file named `moo`
176. In an empty directory, what is the output on your screen after this command line:  
`ls 2>/dev/null nosuchfile`
- `ls: 2>/dev/null nosuchfile: No such file or directory`
  - `nosuchfile`
  - no output
  - `ls: nosuchfile: No such file or directory`
  - `ls: /dev/null: No such file or directory`

177. If file **ten** contains ten lines, and file **twenty** contains twenty lines, then how many lines are output on your screen by this command line:  
`cat twenty | sort ten`  
 a. 10            b. 30            c. 20            d. 0            e. 60
178. If my current working directory is **/home**, and my HOME directory is **/home/ian**, which command copies file **/bin/ls** into my HOME directory under the name **me**?  
 a. `cp ../../bin/ls ../ian/me`  
 b. `cp ../ian/../../bin/ls ../home/ian/me`  
 c. `cp ../../bin/./ls /ian/me`  
 d. `cp ../home/./ian/../../bin/ls ./ian/./me`  
 e. `cp ian/../../bin/ls ./ian/me`
179. Which command line displays all the non-hidden names in the current directory that contain the letter **a** (and no others)?  
 a. `echo *a`                    b. `echo ?a?`                    c. `echo [a]`  
 d. `echo *a*`                    e. `echo a*`
180. If file **foo** contains 9 lines, each of which is the one-digit line number of the line in the file (1 through 9), what is the output on your screen of this command:  
`cat foo foo | cat | tail -4 | head -1`  
 a. 6            b. 7            c. 8            d. 5            e. 9
181. Which pathname almost always leads to the same file named: **/etc/passwd**?  
 a. `../etc/passwd`                    b. `./etc/passwd`  
 c. `/etc/./etc/./etc/./passwd`                    d. `/etc/../../etc/./passwd`  
 e. `/etc/passwd/.`
182. Which of these pathnames is *not* an absolute pathname (after all shell expansions)?  
 a. `/foo`                    b. `foo`                    c. `/../foo`  
 d. `$HOME/foo`                    e. `~/foo`
183. To make the **bash** shell complete commands or file names, you type the first part of the command or file name and then press this key:  
 a. `[ALT]`                    b. `[CTRL]-[C]`                    c. `[CTRL]-[D]`  
 d. `[TAB]`                    e. `[ALT]-[F1]`
184. Which command line below outputs only lines 5-10 of the file named **foo**?  
 a. `tail -10 foo | head -6`                    b. `head -5 foo | tail -10`  
 c. `head -10 foo | tail -6`                    d. `head -15 foo | tail -5`  
 e. `tail -15 foo | head -5`
185. In a manual page **SYNOPSIS** section, ellipsis (three dots) (**...**) mean:  
 a. no special meaning                    b. something that is optional  
 c. something that is repeated                    d. the parent directory  
 e. a hidden directory

186. Which command pipeline outputs the count of the number of manual page titles that contain the keyword "sort"?  
 a. `man -k sort | wc`                    b. `man sort | wc`  
 c. `wc man sort`                    d. `wc -k sort`  
 e. `man sort ; wc`
187. How many arguments and options are there to the command:  
`cal -jy 2001`  
 a. A single numeric option and a three-letter file name.  
 b. Two arguments, one of which is a single option and the other is a pathname.  
 c. Two command line arguments, one of which contains two options.  
 d. Two arguments, no options.  
 e. Two options, no arguments.
188. What is the output of this command line in an empty directory:  
`touch x .a .ab .cde .fghi ; echo .??*`  
 a. an error message from `echo` saying `.??*` does not exist  
 b. `.ab .cde .fghi`  
 c. `.cde .fghi`  
 d. `.??*`  
 e. `. . . .a .ab .cde .fghi`
189. If my current directory is **/lib**, which of these pathnames is equivalent to the file name **/lib/foo**?  
 a. `./foo`                    b. `../foo`                    c. `../lib/foo/.`  
 d. `/foo`                    e. `./lib/foo`
190. If file **twenty** contains twenty lines, and file **thirty** contains thirty lines, then how many lines are output on your screen by this command line:  
`tail thirty | cat twenty`  
 a. 30            b. 0            c. 21            d. 20            e. 50
191. What is the output of this command line in an empty directory:  
`touch 1 2 3 .a .ab .abc ; echo [.]*`  
 a. no output  
 b. `[.]*`  
 c. `. . . .a .ab .abc`  
 d. an error message from `echo` saying `[.]*` does not exist  
 e. `.a .ab .abc`
192. In an empty directory, what is the output on your screen after this command line:  
`echo hi >.out ; ls *`  
 a. `*`  
 b. `. . . .out`  
 c. an error message from `ls` saying `*` does not exist  
 d. no output  
 e. `.out`

193. If my current directory is `/home`, and my HOME directory is `/home/xx`, which command copies the password file into my HOME directory under the name `foo`?
- `cp ../../etc/passwd /xx/foo`
  - `cp xx/../../etc/passwd ../home/xx/foo`
  - `cp xx/../../etc/passwd xx/foo`
  - `cp ../etc/passwd ../xx/foo`
  - `cp ../home/xx/../../etc/passwd ./xx/./foo`
194. If `foo` is a sub-directory that contains only the file `single`, what happens after this command: `mv foo/single foo/double`
- the command fails because the name `double` does not exist
  - the command fails because `single` is not a directory
  - an empty file named `double` is created
  - there is only the file named `double` in the directory now
  - there is a second copy of the file `single` in the file named `double`
195. If my current directory is `/home`, which of these pathnames is equivalent to the pathname `/home/a/b/c`?
- `../a/b/c`
  - `./home/a/b/c`
  - `/a/b/c`
  - `../home/a/b/c`
  - `../home/b/c`
196. If `foo` is a sub-directory that contains only the file `single`, what happens after this command: `mv ./foo/single foo/./double`
- the command fails because the name `foo/./double` does not exist
  - the directory `foo` now contains only a file named `double`
  - there is a second copy of the file `single` in the file named `double`
  - the directory `foo` is now empty
  - the command fails because the name `double` does not exist
197. What is the absolute pathname of the Unix/Linux password (account) file?
- `/bin/passwd`
  - `/var/passwd`
  - `/lib/passwd`
  - `/etc/passwd`
  - `/usr/passwd`
198. What is the output on your screen of this command line:  
`echo pig >one ; echo cow | head -2 one`
- `pig`
  - an error message
  - `cow` followed by `pig`
  - `cow`
  - `pig` followed by `cow`
199. What is the output on your screen after these command lines:  
`echo one >x ; cp x y ; echo two >>y`  
`sort x >y ; cat y`
- `two`
  - no output
  - `one`
  - `one` followed by `two`
  - `two` followed by `one`

200. How many words are in the file `x` after this command line:  
`echo 1 2 >x ; echo 3 >x ; echo 4 >>x`
- 4
  - 3
  - 1
  - 0
  - 2
201. In an empty directory, how many arguments are passed to the `cat` command in this command line: `date >a1 ; touch a2 ba ca ; cat a*`
- 1
  - 4
  - 2
  - 3
  - none
202. If I am in my HOME directory named `/home/me` and `mt` is an empty sub-directory, what is true after this command line:  
`touch ./foo ; mv ./mt/./foo ../me/bar`
- the command fails because path `../me/bar` does not exist
  - the command fails because path `./mt/./foo` does not exist
  - the directory `mt` now contains only a file named `bar`
  - there is a second copy of the file `foo` in the file named `bar`
  - the directory `mt/..` now has a file named `bar` in it
203. If I am in my HOME directory named `/home/me` and `mt` is an empty sub-directory, what is true after this command line:  
`touch ../me/foo ; cp ./mt/./foo ./mt/./bar`
- the directory `mt` now has a file named `bar` in it
  - the directory `mt` is still empty
  - the command fails because the path `./mt/./foo` does not exist
  - the directory `mt` now contains two files
  - the file named `foo` is now renamed to `bar`
204. If my current working directory is `/home`, and my HOME directory is `/home/xx`, which command copies the password file into my HOME directory under the name `foo`?
- `cp ../../etc/passwd /xx/foo`
  - `cp ../home/xx/../../etc/passwd ../xx/./foo`
  - `cp ../etc/passwd ../xx/foo`
  - `cp xx/../../etc/passwd ../home/xx/foo`
  - `cp xx/../../etc/passwd xx/foo`
205. If `foo` is a sub-directory that contains only the file `pig`, what happens after this command: `mv foo/pig foo/./dog`
- the directory `foo` is now empty
  - the command fails because the name `dog` does not exist
  - the command fails because the name `foo/./dog` does not exist
  - the directory `foo` now contains only a file named `dog`
  - there is a second copy of the file `pig` in the file named `dog`
206. Which of the command lines below can generate a non-empty file?
- `ls foo >foo`
  - `tail foo >foo`
  - `sort foo >foo`
  - `grep 'foo' foo >foo`
  - `cat foo >foo`

207. In a directory containing one file named **dog**, what is the output on your screen after this command line: `1>/dev/null ls *`
- `ls: *: No such file or directory`
  - `bash: 1>/dev/null: command not found`
  - `*`
  - no output
  - `dog`
208. What would you see if you typed this command: `cat /foo`
- The contents of the file **foo** located in the ROOT directory
  - The contents of the file **foo** located in the parent directory
  - The contents of the file **foo** located in your HOME directory
  - The contents of your subdirectory named **foo**
  - The contents of your directory named **foo**
209. If I am in my HOME directory named **/home/me** and **sub** is an empty sub-directory, what is true after this command line:  
`touch ./fil ; mv sub/./fil ../me/cat`
- the command fails because the path `../me/cat` does not exist
  - there is a second copy of the file **fil** in the file named **cat**
  - the directory **sub** now contains only a file named **cat**
  - the directory **sub/..** now has a file named **cat** in it
  - the command fails because the path `sub/./fil` does not exist
210. Which of these commands always returns you to your account HOME directory?
- `cd /home`
  - `cd home`
  - `cd`
  - `cd ..`
  - `cd /home/..`
211. What is in file **foo** after this command line: `echo 1 2 >foo 3`
- `1 2`
  - nothing (empty file)
  - `echo 1 2`
  - `3`
  - `1 2 3`
212. If my current directory is **/home**, and my HOME directory is **/home/me**, which command copies the password file into my HOME directory under the name **foo**?
- `cp ../etc/passwd ../me/foo`
  - `cp ./me/./etc/passwd ../home/me/foo`
  - `cp ../../etc/passwd /me/foo`
  - `cp me/../../etc/passwd me/foo`
  - `cp ../home/me/./etc/passwd ./me/./foo`
213. If **cow** is a sub-directory that contains only the file **dog**, what happens after this command: `mv cow/dog cow/./cat`
- the directory **cow** now contains only a file named **cat**
  - the directory **cow** is now empty
  - the command fails because the name `cow/./cat` does not exist
  - there is a second copy of the file **dog** in the file named **cat**
  - the command fails because the name **cat** does not exist

214. How many lines are in file **out** after this command line:  
`date >wc >cat >out`
- 2
  - 0
  - 0 0 0
  - 1
  - 1 6 29
215. What is the output of this command line in an empty directory: `ls *`
- no output on screen
  - `. ..`
  - `*`
  - `.`
  - an error message from `ls` saying `*` does not exist
216. What is the output of this command line in an empty directory: `echo *`
- `. ..`
  - no output on screen
  - an error message from `echo` saying `*` does not exist
  - `.`
  - `*`
217. If my current directory is **/home**, and my HOME directory is **/home/me**, which command copies the password file into my HOME directory under the name **foo**?
- `cp ../home/me/./etc/passwd ./me/./foo`
  - `cp ../etc/passwd ../me/foo`
  - `cp me/./etc/passwd ../home/me/foo`
  - `cp me/../../etc/passwd me/foo`
  - `cp ../../etc/passwd /me/foo`
218. Which command line displays all the names in the current directory that are exactly three digits long (and no others)?
- `echo [1-3][1-3][1-3]`
  - `echo ???`
  - `echo [?][?][?]`
  - `echo [0-9][0-9][0-9]`
  - `echo [3][3][3]`
219. What is the output of this successful command sequence?  
`cd /home/foo ; touch dir ; mkdir bar ; pwd`
- `/home/foo/bar`
  - `/home/bar`
  - `/home/dir`
  - `/home/foo/dir`
  - `/home/foo`
220. What is the correct syntax to redirect both standard output and standard error into the same output file?
- `sum >out foo 2>&1`
  - `sum foo 1>out 2>1`
  - `sum 1>out 2>out foo`
  - `sum 2>&1 foo >out`
  - `sum 2>1 >out foo`
221. Which command line displays all the non-hidden names in the current directory that contain the letter **x** (and no others)?
- `echo ?x?`
  - `echo [x]`
  - `echo x*`
  - `echo *x*`
  - `echo *x`

222. Which command line lists all possible utilities available for compiling programs?
- `grep compile /etc/`
  - `apropos compile`
  - `find compile`
  - `man compile`
  - `locate compile`
223. What do you do to erase an entire line of typing in the shell?
- type `[CTRL-W]`
  - type `[CTRL-U]`
  - select the line with the mouse and use the `DEL` key
  - type `[CTRL-D]`
  - type `[CTRL-C]`
224. In an empty directory, what happens after this command line:  
`mkdir a b c ; mv a b c`
- an error message: `mv: target 'c' is not a directory`
  - the directories `a` and `b` are appended to the directory `c`
  - the directories `a` and `b` are moved into the directory `c`
  - the directories `a`, `b`, and `c` are moved to the directory `c`
  - the directories `a`, `b`, and `c` are moved to the current directory
225. How do I search for the string `xyz` in the text display output from the `man` command?
- use the mouse to select "Search" in the menu
  - `/xyz`
  - `@xyz`
  - `search xyz`
  - `find xyz`
226. If file `foo` contains 99 lines, each of which is the two-digit line number of the line in the file (01 through 99), what is the output on your screen of this command:  
`sort -r foo foo | tail -4 | head -1`
- 96 96
  - 02
  - 98
  - 04 04
  - 96
227. What is in the file `x` after this command line:  
`echo foo >a ; rm b ; echo bar >>b ; cp a b >x`
- no such file (nonexistent)
  - `foo` followed by `bar`
  - `bar`
  - `foo`
  - nothing (empty file)
228. What happens when you try to change to the parent directory of `ROOT`, e.g.  
`cd / ; cd ..`
- the shell asks you to retype this invalid directory
  - the shell issues a warning, but changes to the parent
  - the shell current directory is still `ROOT`; no change
  - the shell issues an error message and does not change
  - you go to the parent directory containing your `C:` drive

229. Which command below is the best way to find a line containing a question mark (?) in the file `/etc/passwd`?
- `grep '?' /etc/passwd`
  - `find '?' /etc/passwd`
  - `grep './?' /etc/passwd`
  - `search '?' /etc/passwd`
  - `grep /etc/passwd '?'`
230. If my current directory is `/bin`, which of these pathnames is equivalent to the file name `/bin/ls`?
- `ls/.`
  - `/root/bin/ls`
  - `./bin/ls`
  - `../../bin/ls`
  - `../bin/ls/.`
231. If `foo` is a sub-directory that contains only the file `bar`, what happens after this command: `mv foo/./bar foo/./me`
- the directory `foo` is now empty
  - the command fails because the name `foo/./bar` does not exist
  - the command fails because the name `me` does not exist
  - there is a second copy of the file `bar` in the file named `me`
  - the directory `foo` now contains only a file named `me`
232. Which of the following commands will leave `file1` non-empty?
- `head file1 > file1`
  - `sort file1 > file1`
  - `cat file1 > file1`
  - `tail file1 > file1`
  - `wc file1 > file1`
233. If `/etc/passwd` is a file name, which pathname always leads to the same file?
- `/etc/passwd/./.`
  - `././etc/passwd`
  - `./../etc/./passwd`
  - `/etc/passwd/./../.`
  - `/etc/./../passwd`
234. Give the minimum number of directories in this pathname: `/a/b/c/d`
- 4
  - 3
  - 5
  - 1
  - 2
235. What is the output on your screen after this command line:  
`echo xx >z ; ls z > wc`
- 2
  - 3
  - 1 1 2
  - no output
  - 1 1 3
236. If file `foo` contains 9 lines, each of which is the one-digit line number of the line in the file (1 through 9), what is the output on your screen of this command:  
`cat foo foo | sort -r | head -4 | tail -1`
- 6
  - 8
  - 5
  - 9
  - 7
237. What is in the file `cow` after this command line:  
`echo a >b ; echo b >a ; mv b a >cow`
- no such file (nonexistent)
  - `a` followed by `b`
  - `b`
  - `a`
  - nothing (empty file)

238. What command shows all the lines in file **foo** that contain the string **bar**?
- `grep bar >foo`
  - `cat foo > grep bar`
  - `grep cat foo bar`
  - `grep bar <foo`
  - `grep foo bar`
239. How many lines are in the file **out** after this command line:
- ```
echo hi >x ; echo ho >>x ; cat x x x >out
```
- 2
  - 1
  - 0
  - 3
  - 6
240. Which of these statements is true?
- Unix commands can be entered in upper-case or lower-case letters; they are equivalent.
  - To delete a word from the shell command line, type [CTRL]-[D]
  - To indicate End-of-File (no more input), type [CTRL]-[C].
  - Unix commands must be entered in lower-case letters.
  - To erase an entire line of typing, type [CTRL]-[D].
241. What is in file **out** after this command line: `echo a >out b c`
- b c**
  - a**
  - echo a**
  - a b c**
  - nothing (empty file)
242. If I am in directory **/home/me** and **mt** is an empty sub-directory, what is true after this command line: `touch foo ; mkdir bar ; mv foo bar/mt`
- the directory **mt** is still empty
  - the command fails because **bar/mt** is not a directory
  - the directory **mt** now contains a file named **foo**
  - the directory **bar** now contains a file named **foo**
  - the directory **mt** now contains a directory named **bar**
243. Which of the following statements is true about this command line:
- ```
>dir/c cat dir/d
```
- The command **dir/c** sees two arguments.
  - The command is always invalid.
  - The command **dir/c** sees only one argument
  - The command **cat** sees only one argument.
  - The command **cat** sees two arguments.
244. If I am in directory **/home/me** and **mt** is an empty sub-directory, what is true after this command line: `touch ./foo ; mv ./mt/./foo ../me/bar`
- the command fails because path **../me/bar** does not exist
  - there is a second copy of the file **foo** in the file named **bar**
  - the directory **mt** now contains only a file named **bar**
  - the directory **mt/..** now contains a file named **bar**
  - the command fails because path **./mt/./foo** does not exist

245. If my current directory is **/etc**, which of these pathnames is equivalent to the pathname **/etc/x/y**?
- `./etc/x/y`
  - `../x/y`
  - `/x/y`
  - `../etc/y`
  - `../etc/x/y`
246. Which of the command lines below can generate a non-empty file?
- `head -1 file >file`
  - `sort -r file >file`
  - `cat file >file`
  - `ls -l file >file`
  - `grep pattern file >file`
247. Which command line shows the file in **/bin** with the largest checksum?
- `sum /bin/* | sort -nr | head -1`
  - `sum /bin | sort -nr | head -1`
  - `ls /bin/* | sum | sort -nr | head -1`
  - `cat /bin | sum | sort -nr | head -1`
  - `cat /bin/* | sum | sort -nr | head -1`
248. How can you ask the **bash** (Linux) shell to complete commands or file names for you?
- Type the first part of the command or file name and press the [CTRL]-[D] key.
  - Type the first part of the command or file name and press the [ALT] key.
  - Type the first part of the command or file name and press the [TAB] key.
  - Type the first part of the command or file name and press the [ALT]-[F1] key.
  - Type the first part of the command or file name and press the [CTRL]-[C] key.
249. If **/etc/passwd** is a file name, which pathname always leads to the same file?
- `./etc/passwd`
  - `../etc./passwd`
  - `/etc/passwd/.`
  - `/etc/passwd/./..`
  - `/etc/./../passwd`
250. What is your HOME directory?
- This is where "root" goes when "root" logs in to the system
  - The directory that your shell is in now
  - The directory named **/home**
  - The directory into which you are placed when you first log in
  - The top directory of the Unix/Linux/BSD/OSX file system tree
251. What is the output on your screen of this command line:
- ```
echo bat >pig ; echo one | tail pig
```
- bat** followed by **one**
  - one** followed by **bat**
  - an error message
  - one**
  - bat**

252. If file **/a** contains 40 lines, and file **/b** contains 60 lines, then how many lines are output on your screen by this command line:  
`sort /a /b | cat /a | cat /b`  
 a. 160      b. 40      c. 100      d. 60      e. 200
253. In an empty directory, how many lines are in file **foo** after this command line:  
`ls nosuchfile . .. 2>foo`  
 a. 3      b. 2      c. 1      d. 4      e. 0
254. How many arguments and options are there to the command:  
`wc -wc /sort`  
 a. Two command line arguments, one of which contains two bundled options.  
 b. Two arguments, no options.  
 c. Two options, no arguments.  
 d. Two arguments, one of which is a single option and the other is a pathname.  
 e. A three-letter file name and a **/sort** switch option argument.
255. If file **a** contains 2 lines, and file **b** contains 3 lines, then how many lines are in file **c** after this command line:  
`cat a a >c ; head b >>a ; cat c b >c a`  
 a. 10      b. 8      c. 0      d. 7      e. 12
256. In an empty directory, how many arguments are passed to the **cat** command in this command line: `touch a1 a2 ba ca ; cat a*`  
 a. 1      b. 4      c. 2      d. none      e. 3
257. If file **foo** contains 9 lines, each of which is the one-digit line number of the line in the file (1 through 9), what is the output on your screen of this command:  
`sort foo foo | tail -5 | head -1`  
 a. 9      b. 1 1      c. 5 5      d. 7      e. 1
258. If **/etc/shadow** is a file name, which pathname always leads to the same file?  
 a. **/etc/shadow/./.**      b. **/./../etc/./shadow**  
 c. **/etc/shadow/././.**      d. **/etc/./././shadow**  
 e. **././etc/shadow**
259. If **pig** is a sub-directory that contains only the file **dog**, what happens after this command: `mv pig/dog pig/././cat`  
 a. the directory **pig** is now empty  
 b. the command fails because the name **pig/././cat** does not exist  
 c. the command fails because the name **cat** does not exist  
 d. the directory **pig** now contains only a file named **cat**  
 e. there is a second copy of the file named **dog** in the file named **cat**
260. The output of the **find** command is:  
 a. a recursive list of pathnames  
 b. account names matching a pattern  
 c. finds patterns in a file corresponding to lines  
 d. finds lines in a file matching a pattern  
 e. a recursive list of users logged in to the system

261. What is the output on your screen of this command line:  
`echo wc >wc ; wc wc >wc ; cat wc`  
 a. 0 0 0 wc      b. wc      c. 1 1 3 wc  
 d. 1 1 2 wc      e. no output
262. Given the pathname **/etc/passwd**, the *basename* of this pathname is:  
 a. **passwd**      b. **etc**      c. **/**  
 d. **etc/passwd**      e. **/etc**
263. What is in the file **out** after this command line:  
`echo hi >x ; echo ho >>x ; cp x y >out`  
 a. **hi**      b. **ho**  
 c. no such file (nonexistent)      d. **hi** followed by **ho**  
 e. nothing (empty file)
264. If **foo** is a sub-directory that contains only the file **bar**, what happens after this command: `mv foo/me foo/bar`  
 a. an empty file named **me** is created  
 b. the command fails because **bar** is not a directory  
 c. the command fails because the name **me** does not exist  
 d. there is only the file named **me** in the directory now  
 e. there is a second copy of the file **bar** in the file named **me**
265. How many words are in file **out** after this command line:  
`echo one >two >three >out`  
 a. 1      b. 0      c. 2      d. 4      e. 3
266. Which pathname almost always leads to the same file named: **/etc/passwd**?  
 a. **/etc/passwd/.**      b. **/etc/./etc/./passwd**  
 c. **/etc/./etc/passwd**      d. **./etc/passwd**  
 e. **../etc/passwd**
267. What is the output of this successful command sequence?  
`cd /tmp ; mkdir foo ; mkdir bar ; pwd`  
 a. **/tmp/foo**      b. **/bar**      c. **/tmp/foo/bar**  
 d. **/tmp**      e. **/tmp/bar**
268. What is the output of this successful command sequence?  
`cd /usr/bin ; mkdir dir ; touch bar ; pwd`  
 a. **/usr/bin/dir**      b. **/usr/bin**      c. **/home/dir**  
 d. **/home/bar**      e. **/usr/bin/bar**
269. What would you type to find the string **tony** in the file **/etc/passwd**?  
 a. **grep /etc/passwd tony**      b. **file /etc/passwd tony**  
 c. **find tony /etc/passwd**      d. **file tony /etc/passwd**  
 e. **grep tony /etc/passwd**

270. What is the output of this command line in an empty directory:  
`touch 1 2 3 .a .b .c ; echo .??*`
- `. . . 1 2 3 .a .b .c`
  - `.??*`
  - `. . . .a .b .c`
  - an error message from `echo` saying `.??*` does not exist
  - `.a .b .c`
271. To prevent disconnections when using the Windows version of **PUTTY**, you should make this configuration change:
- your password will not echo on your screen as you type
  - use your ACSIS password as your password
  - log in using your Blackboard userid
  - set the seconds between keepalives to 55
  - use your student number as your password
272. What is the output of this command line in an empty directory:  
`touch 1 .1 23 .23 456 ; echo [12]*`
- an error message from `echo` saying `[ab]*` does not exist
  - `1 .1 23 .23`
  - `[12]*`
  - `1 .1 23 .23 456`
  - `1 23`
273. If file `/a` contains 3 lines, and file `/b` contains 5 lines, then how many lines are in file `/c` after this command line:  
`cat /a /b >/c ; sort /c >/c ; sort /c /a /b >/c`
- 0
  - 16
  - 3
  - 8
  - 5
274. How do I search for the string `foo` in the text display output from the `man` command?
- `search foo`
  - `@foo`
  - `/foo`
  - select "**Search**" in the menu
  - `find foo`
275. What is the correct syntax to redirect both standard output and standard error into the same output file?
- `date 2>&1 >out`
  - `date 1>out 2>1`
  - `date 2>1 >out`
  - `date 1>out 2>out`
  - `date >out 2>&1`
276. If you type the command `sleep 60`, which **CTRL** key will **interrupt** it and take you back to the command prompt?
- `^I`
  - `^D`
  - `^U`
  - `^C`
  - `^R`
277. If file `foo` contains 9 lines, each of which is the one-digit line number of the line in the file (1 through 9), what is the output on your screen of this command:  
`sort foo foo | tail -4 | head -1`
- 6
  - 6 6
  - 1 1
  - 8
  - 4 4

278. If my current working directory is `/home`, and my HOME directory is `/home/me`, which command copies the password file into my HOME directory under the name `foo`?
- `cp ../../etc/passwd /me/foo`
  - `cp me/../../etc/passwd ./me/foo`
  - `cp ../etc/passwd ../me/foo`
  - `cp ../me/../../etc/passwd ../home/me/foo`
  - `cp ../home/./me/../../etc/passwd ./me/./foo`
279. If I am in my HOME directory named `/home/me` and `dir` is an empty sub-directory, what is true after this command line:  
`touch ./foo ; mv dir/./foo ../me/cat`
- the directory `dir/..` now has a file named `cat` in it
  - the directory `dir` now contains only a file named `cat`
  - the command fails because the path `dir/./foo` does not exist
  - there is a second copy of the file named `foo` in the file named `cat`
  - the command fails because the path `./me/cat` does not exist
280. In an empty directory, what is the output on your screen after this command line:  
`touch 1 2 .a .b ; echo .*`
- 1 2
  - `. . . .a .b`
  - `.a .b`
  - `.*`
  - an error message from `echo` saying `.*` does not exist
281. How many lines are in file `out` after this command line:  
`echo hi >dog >cat >out`
- 1
  - 3
  - 0
  - 2
  - 4
282. In an empty directory, how many words are in file `out` after this command line:  
`echo hi >a ; ls >out`
- 1
  - 0
  - 3
  - 4
  - 2
283. If file `foo` contains 9 lines, each of which is the one-digit line number of the line in the file (1 through 9), what is the output on your screen of this command:  
`sort foo foo | tail -2 | head -1`
- 9
  - 1
  - 8
  - 8 8
  - 2 2
284. If I am in directory `/home/me` and `mt` is an empty sub-directory, what is true after this command line: `touch foo ; mv ./mt/./foo ../me/bar`
- the command fails because the path `./mt/./foo` does not exist
  - the directory `mt` now contains only a file named `bar`
  - the parent directory of `mt` now contains a file named `bar`
  - there is a second copy of the file `foo` in the file named `bar`
  - the command fails because the path `../me/bar` does not exist



302. If I am in my HOME directory named `/home/me` and `mt` is an empty sub-directory, what is true after this command line:  
`touch ./foo ; mv ./mt/./foo ../me/bar`
- the directory `mt/..` now has a file named `bar` in it
  - there is a second copy of the file named `foo` in the file named `bar`
  - the command fails because path `./mt/./foo` does not exist
  - the directory `mt` now contains only a file named `bar`
  - the command fails because path `../me/bar` does not exist
303. What is the *current directory*?
- The directory named `/current`
  - The directory into which you are placed when you first log in
  - The directory named `..` (dot dot)
  - The directory that your shell (or any Unix process) is in now
  - This is where "root" goes when "root" logs in to the system
304. Which command line displays the contents of the Unix `passwd` file one page at a time?
- `cat less | /etc/passwd`
  - `/etc/passwd cat less`
  - `/etc/passwd | less`
  - `cat /etc/passwd less`
  - `less /etc/passwd`
305. Did you read all the words of the test instructions on page one?
- Taip** (*Yes - Lithuanian*)
  - Tak** (*Yes - Polish*)
  - Jes** (*Yes - Esperanto*)
  - Igen** (*Yes - Hungarian*)
  - Sim** (*Yes - Portuguese*)

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