

PRINT Name: _____ LAB Section: **One-Answer Multiple Choice 229 Questions****Weight 10%**

- ☞ Read **all** the words of these instructions and **both** sides (back and front) of all pages.
- ☞ Manage your time. Answer questions you know, first. One Answer per question.
- ☞ **PRINT** your Name and Lab on this Question Sheet. You may write or draw on this sheet.
- ☞ Use your full, unabbreviated name on the mark-sense form. Do not abbreviate your name.
- ☞ Enter your NAME, Student Number, and Answers. Fill in the bubbles with pencil, no pen.
- ☞ The answer to the questions below about reading/doing all these test instructions is: **Jes**

191. Answer **191** is **E**
192. Answer **192** is **C**
193. Answer **193** is **A**
194. Answer **194** is **A**
195. Answer **195** is **B**
196. Answer **196** is **D**

Your Test Version is:

E C A A B D

Fill in the bubbles for the above six letters as six answers **191** through **196** on the back side of the Scantron form, in the lower-right-most answer column.

1. **Did you read all the words of the test instructions on page one?**
 - a. **Taip** (Yes - Lithuanian)
 - b. **Tak** (Yes - Polish)
 - c. **Igen** (Yes - Hungarian)
 - d. **Jes** (Yes - Esperanto)
 - e. **Sim** (Yes - Portuguese)
2. **My three-digit Lab Section number is:**
 - a. The Test Version number printed in the top left corner.
 - b. My lab room number: **B384, A219, B132, B185, P213**
 - c. My lecture room number, e.g. **T119, C346**
 - d. The timetable section number of my weekly 2-hour lab period.
 - e. My lecture section number, e.g. **010** or **020**.
3. In which section of the manual do you find super-user and admin commands?
 - a. 8
 - b. 1
 - c. 2
 - d. 3
 - e. 4
4. How many lines are in file **out** after this command line:


```
date >wc >cat >out
```

 - a. 0 0 0
 - b. 0
 - c. 1
 - d. 2
 - e. 1 6 29
5. What is the absolute pathname of the Unix/Linux password (account) file?
 - a. **/bin/passwd**
 - b. **/usr/passwd**
 - c. **/etc/passwd**
 - d. **/lib/passwd**
 - e. **/var/passwd**

6. What is the output on your screen after this command line:


```
mkdir dir ; touch dir/.aa dir/.bb ; echo dir/*
```

 - a. **dir/***
 - b. no output
 - c. **dir/. dir/.. dir/.aa dir/.bb**
 - d. **dir/.aa dir/.bb**
 - e. **dir/**
7. In an empty directory, how many arguments are passed to the **wc** command in this command line: **touch xx yy >zz 123 .a b. ; wc ??**
 - a. **2**
 - b. **0**
 - c. **1**
 - d. **5**
 - e. **4**
8. What is the result of this exact command line: **echo /foo bar**
 - a. all the files under directory **/foo** with the name **bar** will be displayed
 - b. the two text strings **/foo** and **bar** will be displayed
 - c. the names of the pathnames **/foo** and **bar** will be displayed
 - d. the contents of the files **/foo** and **bar** will be displayed
 - e. file **/foo** will be copied to **bar**
9. What is the output of this command line in an empty directory:


```
touch x .a .ab .cde .fgghi ; echo .??*
```

 - a. an error message from **echo** saying **.??*** does not exist
 - b. **. . . .a .ab .cde .fgghi**
 - c. **.cde .fgghi**
 - d. **.??***
 - e. **.ab .cde .fgghi**
10. 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. **4**
 - d. **0**
 - e. **1**
11. How can you ask the **bash** (Linux) shell to complete commands or file names for you?
 - a. Type the first part of the command or file name and press the **[CTRL]-[C]** key.
 - b. Type the first part of the command or file name and press the **[ALT]-[F1]** key.
 - c. Type the first part of the command or file name and press the **[TAB]** key.
 - d. Type the first part of the command or file name and press the **[CTRL]-[D]** key.
 - e. Type the first part of the command or file name and press the **[ALT]** key.
12. Which command line shows the file in **/bin** with the largest checksum?
 - a. **cat /bin | sum | sort -nr | head -n 1**
 - b. **cat /bin/* | sum | sort -nr | head -n 1**
 - c. **sum /bin | sort -nr | head -n 1**
 - d. **sum /bin/* | sort -nr | head -n 1**
 - e. **ls /bin/* | sum | sort -nr | head -n 1**

13. To change your own account password, use this exact command line:
- `$ passwd cst8207`
 - `$ passwd options LOGIN`
 - `$ passwd`
 - `$ passwd cst8207.idallen.ca`
 - `$ passwd root`
14. The output of the `find` command is:
- account names matching a pattern
 - finds lines in a file matching a pattern
 - a recursive list of users logged in to the system
 - a recursive list of pathnames
 - finds patterns in a file corresponding to lines
15. 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 -n 3 | head -n 1
```
- 8 8
  - 8
  - 2 2
  - 1
  - 9
16. 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/.`
17. Which of these characters is *not* a shell GLOB meta-character?
- ?
  - [
  - \*
  - #
  - ]
18. Which pathname almost always leads to the same file named: `/etc/passwd`?
- `../etc/passwd`
  - `/etc/./etc/./passwd`
  - `./etc/passwd`
  - `/etc/passwd/.`
  - `/etc/./etc/./passwd`
19. How many words are in the file `x` after this command line:
- ```
echo 1 2 >x ; echo 3 >x ; echo 4 >>x
```
- 2
 - 4
 - 1
 - 0
 - 3
20. What is the output of this command line in an empty directory:
- ```
touch .a .b .c ; echo .??*
```
- an error message from `echo` saying `.??*` does not exist
  - no output
  - `.??*`
  - `.a .b .c`
  - `...a .b .c`
21. The option to `ls` that shows hidden names is:
- `-l`
  - `-h`
  - `-l`
  - `-a`
  - `-i`

22. 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/???`
 - no output
 - `dir/.aa dir/.ab dir/.a? dir/.a*`
 - `dir/.aa dir/.ab`
 - `dir/.a?`
23. In an empty directory, what is the output on your screen after this command line:
- ```
echo hi >a ; ls >wc -l
```
- a
  - no output
  - 1
  - 0
  - 2
24. Which of these pathnames is *not* an absolute pathname (after all shell expansions)?
- `~/foo`
  - `/foo`
  - `$HOME/foo`
  - `././foo`
  - `foo`
25. What is the output of this command line in an empty directory:
- ```
touch .a .b .c ; echo .*
```
- `...a .b .c`
 - no output
 - an error message from `echo` saying `.*` does not exist
 - `.*`
 - `.a .b .c`
26. The purpose of the `PS1` shell variable is:
- to set the shell prompt
 - to find patterns inside a text file
 - to allow access to the ROOT directory
 - to protect your HOME directory from access
 - to list your suspended jobs
27. Which command line displays only the names in the current directory that are exactly three digits long (and no other names)?
- `echo [3][3][3]`
 - `echo [?][?][?]`
 - `echo ???`
 - `echo [0-9][0-9][0-9]`
 - `echo [1-3][1-3][1-3]`
28. 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`
- 0
 - 5
 - 3
 - 2
 - 8

29. 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 ../../etc/passwd /me/foo`
 - `cp me/../../etc/passwd me/foo`
 - `cp ./me/./etc/passwd ../home/me/foo`
 - `cp ../home/me/./etc/passwd ./me/./foo`
30. If `ian` is a sub-directory that contains only the file `foo`, what happens after this command: `mv ./ian/./foo ./ian/./bar`
- the directory `ian` is now empty
 - there is a second copy of the file `foo` in the file named `bar`
 - the command fails because the name `./ian/./bar` does not exist
 - the directory `ian` now contains only a file named `bar`
 - the command fails because the name `./ian/./foo` does not exist
31. What is the output of this successful command sequence?
- ```
cd /home/dir ; mkdir one ; mkdir two ; pwd
```
- `/two`
  - `/home/dir/two`
  - `/home/dir/one`
  - `/home/dir/one/two`
  - `/home/dir`
32. In which section of the manual do you find standard commands?
- 2
  - 1
  - 4
  - 8
  - 3
33. In a directory containing one file named `dog`, what is the output on your screen after this command line: `2>/dev/null ls nosuchfile`
- `dog`
  - no output
  - `bash: 2>/dev/null: command not found`
  - `nosuchfile`
  - `ls: nosuchfile: No such file or directory`
34. What is the result of this exact command line: `ls /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`
35. 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 -n 5 x >x ; sort x y z >cat
```
- 50
 - 40
 - 55
 - 0
 - 60

36. 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
```
- 10
  - 0
  - 60
  - 30
  - 20
37. What is the output on your screen after these command lines:
- ```
echo 1 >x ; cp x y ; echo 2 >>y
sort x >y ; cat y
```
- 2 followed by 1
 - 2
 - 1
 - no output
 - 1 followed by 2
38. 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 -n 2 | head -n 1
```
- 9
  - 8
  - 2 2
  - 8 8
  - 1
39. 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:
- `[CTRL]-[C]`
  - `[TAB]`
  - `[ALT]`
  - `[ALT]-[F1]`
  - `[CTRL]-[D]`
40. 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 -n 5 y >y ; sort x y z >cat
```
- 60
 - 40
 - 50
 - 45
 - 0
41. Which of these statements is true?
- To delete a word from the shell command line, type `[CTRL]-[D]`
 - To erase an entire line of typing, type `[CTRL]-[D]`.
 - Unix commands can be entered in upper-case or lower-case letters; they are equivalent.
 - Unix commands must be entered in lower-case letters.
 - To indicate End-of-File (no more input), type `[CTRL]-[C]`.
42. 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 -n 4 | tail -n 1
```
- 6
  - 5
  - 9
  - 8
  - 7
43. If my current directory is `/etc`, which of these pathnames is equivalent to the file name `/etc/passwd`?
- `/passwd`
  - `../etc/passwd/.`
  - `./passwd`
  - `../passwd`
  - `./etc/passwd`

44. In an empty directory, what happens after this command line:  
`mkdir a b c ; mv a b 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** and **b** are appended to the directory **c**
  - an error message: **mv: target 'c' is not a directory**
  - the directories **a**, **b**, and **c** are moved to the current directory
45. 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**
  - mt**
  - bash: 2>/dev/null: command not found**
  - nosuchfile**
  - no output
46. 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
47. 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** now contains a directory named **bar**
  - the command fails because **bar/mt** is not a directory
  - the directory **mt** is still empty
  - the directory **bar** now contains a file named **foo**
  - the directory **mt** now contains a file named **foo**
48. 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/????**
  - no output
  - dir/.123 dir/.124**
  - echo: dir/????: No such file or directory**
  - dir/.123 dir/.124 dir/.???**

49. 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/.AA cow/.A1 cow/.BB cow/.B.**
  - cow/\***
  - cow/.AA cow/.A1 cow/.BB**
  - cow/.B.**
  - no output
50. 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 **mt** now contains only a file named **bar**
  - there is a second copy of the file **foo** in the file named **bar**
  - the directory **./me** now contains a file named **bar**
  - the command fails because the path **mt/./bar** does not exist
51. 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*`
- 4**
  - 3**
  - 2**
  - none
  - 1**
52. In an empty directory, what is the output on your screen after this command line:  
`ls out 2>/dev/null`
- ls: /dev/null: No such file or directory**
  - ls: out: No such file or directory**
  - out**
  - no output
  - ls: out 2>/dev/null: No such file or directory**
53. Which of these commands always returns you to your account HOME directory?
- cd**
  - cd ..**
  - cd /home/..**
  - cd /home**
  - cd home**
54. 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**
55. In an empty directory, what is the output on your screen after this command line:  
`touch 1 2 .a .b ; echo .*`
- . . .a .b**
  - .\***
  - 1 2**
  - .a .b**
  - an error message from **echo** saying **.\*** does not exist

56. 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`
  - there is a second copy of the file `new` in the file named `old`
  - the parent directory of `dir` now has a file named `old` in it
  - the command fails because the path `./dir/../new` does not exist
  - the command fails because the path `../myhome/old` does not exist
57. Which of the following commands will leave `file1` non-empty?
- `cat file1 > file1`
  - `tail file1 > file1`
  - `sort file1 > file1`
  - `head file1 > file1`
  - `wc file1 > file1`
58. 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`
- 80
  - 160
  - 30
  - 50
  - 0
59. 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`
60. The shell meta-character used to separate multiple separate commands on the same line of typing is:
- `;`
  - `:`
  - `@`
  - `+`
  - `,`
61. Which command line below outputs only lines 11-15 of the Unix password file?
- `head -n 15 /etc/passwd | tail -n 5`
  - `head -n 10 /etc/passwd | tail -n 15 /etc/passwd`
  - `tail -n 15 /etc/passwd | head -n 10`
  - `head -n 15 /etc/passwd | tail -n 5 /etc/passwd`
  - `tail -n 10 /etc/passwd | head -n 15 /etc/passwd`
62. 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 -n 4 | head -n 1`
- 96
  - 96 96
  - 04 04
  - 98
  - 01 01
63. What is the output of this command line in an empty directory:  
`touch a .a bc .bc def ; echo [ab]*`
- an error message from `echo` saying `[ab]*` does not exist
  - `[ab]*`
  - no output
  - `a .a bc .bc`
  - `a bc`

64. If my current directory is `/bin`, which of these pathnames is equivalent to the file name `/bin/ls`?
- `/root/bin/ls`
  - `ls/.`
  - `../bin/ls`
  - `../bin/ls/.`
  - `./bin/ls`
65. 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
  - none
  - 3
  - 4
  - 1
66. In an empty directory, how many words are in file `out` after this command line:  
`touch a ; ls >out`
- 4
  - 3
  - 2
  - 1
  - 0
67. 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 `cat` sees only one argument.
  - The command is always invalid.
  - The command `dir/c` sees only one argument
  - The command `cat` sees two arguments.
68. If `foo` is a sub-directory that contains only the file `bar`, what happens after this command: `mv foo/me foo/bar`
- there is a second copy of the file `bar` in the file named `me`
  - an empty file named `me` is created
  - the command fails because `bar` is not a directory
  - the command fails because the name `me` does not exist
  - there is only the file named `me` in the directory now
69. 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`
- 0
  - 10
  - 8
  - 7
  - 12
70. If my current working directory is `/var`, which command copies the password file into directory `/var/ian` under the name `bar`?
- `cp ../var/./ian/./etc/passwd ./ian/./bar`
  - `cp ../../etc/./passwd /ian/bar`
  - `cp ../etc/passwd ../ian/bar`
  - `cp ../ian/./etc/passwd ../var/ian/bar`
  - `cp ./ian/../../etc/passwd ian/bar`
71. How many lines are in the file `bar` after this command line:  
`echo hi >x ; echo ho >>x ; cat x >bar`
- 6
  - 2
  - 4
  - 1
  - 0

72. In the output of `ls -a`, the two-character name `..` signifies what?
- The current directory.
  - The ROOT directory.
  - The parent directory.
  - A file or directory with double links.
  - It begins every name that is hidden.
73. To prevent disconnections when using the Windows version of **PuTTY**, you should make this configuration change:
- use your student number as your password
  - your password will not echo on your screen as you type
  - log in using your Blackboard userid
  - set the seconds between keepalives to 55
  - use your ACSIS password as your password
74. What is the output on your screen of this command line:
- ```
echo pig >one ; echo cow | head -n 2 one
```
- cow
 - `pig` followed by `cow`
 - `pig`
 - an error message
 - `cow` followed by `pig`
75. If my current directory is `/usr`, which of these pathnames is equivalent to the pathname `/usr/x/y/z`?
- `../x/y/z`
 - `x/./y/z`
 - `/x/y/z`
 - `./usr/x/y/z`
 - `./usr/y/z`
76. 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 ../bin/ls ../foo/xx`
 - `cp ./foo/../../bin/ls ./foo/./xx`
 - `cp ../foo/./bin/ls ../home/foo/xx`
77. What happens when you try to change to the parent directory of ROOT, e.g. `cd / ; cd ..`
- 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
 - the shell issues a warning, but changes to the parent
 - the shell asks you to retype this invalid directory

78. What is the output of this command line in an empty directory: `cat *`
- an error message from `cat` saying `*` does not exist
 - no output
 - `.`
 - `*`
 - `.` `..`
79. 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 1>out 2>out`
 - `date >out 2>&1`
 - `date 2>&1 >out`
80. 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
```
- 20
  - 50
  - 0
  - 30
  - 40
81. Which pathname almost always leads to the same file named: `/etc/shadow`
- `./././etc/./shadow`
  - `/etc/shadow/./.`
  - `././etc/shadow`
  - `/etc/./././shadow`
  - `/etc/shadow/././.`
82. If my current directory is `/lib`, which of these pathnames is equivalent to the pathname `/lib/x/y`?
- `/x/y`
  - `../lib/y`
  - `../x/y`
  - `./lib/x/y`
  - `./lib/x/y`
83. 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
```
- there is a second copy of the file `fil` in the file named `cat`
 - the command fails because the path `sub/./fil` does not exist
 - the directory `sub/..` now has a file named `cat` in it
 - the directory `sub` now contains only a file named `cat`
 - the command fails because the path `../me/cat` does not exist
84. What is an operating system?
- A video display card.
 - A word-processing computer program.
 - An accounting package program.
 - A web-browser program.
 - A computer program that manages the hardware.
85. Which pathname almost always leads to the same file named: `/bin/ls`
- `/bin/./ls`
 - `/bin/./bin/./ls`
 - `./bin/./ls/.`
 - `./bin/./ls`
 - `./bin/ls`

86. If my current directory is `/etc`, which of these pathnames is equivalent to the pathname `/etc/x/y`?
- `../x/y`
 - `../etc/y`
 - `/x/y`
 - `../etc/x/y`
 - `./etc/x/y`
87. 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 directory `mt` now contains a file named `foo`
  - the command fails because the path `../me/bar` does not exist
  - the command fails because the path `mt/../../foo` does not exist
  - the directory `mt` is still empty
  - the directory `me` now contains a file named `bar`
88. The basic purpose of a shell is:
- to search for strings inside text files
  - to program system administration backup procedures
  - to expand pathnames
  - to format hard drives
  - to find and run commands
89. What command can you use to delete an empty directory?
- `delete`
  - `erase`
  - `mvdir`
  - `deldir`
  - `rmdir`
90. If my current directory is `/etc`, which of these pathnames is equivalent to the file name `/etc/passwd`?
- `/root/etc/passwd`
  - `./etc/passwd`
  - `passwd/.`
  - `../../etc/./passwd`
  - `../etc/passwd/.`
91. The command that creates a directory and all parent directories is:
- `rm -r a/b/c`
  - `touch a/b/c`
  - `rmdir -r a/b/c`
  - `mkdir -r a/b/c`
  - `mkdir -p a/b/c`
92. In an empty directory, how many arguments are passed to the `cat` command in this command line: `touch a1 a2 ba ca ; cat a*`
- 1
  - 2
  - 4
  - 3
  - none
93. What command shows all the lines in file `cow` that contain the string `pig`?
- `grep cat cow pig`
  - `grep cow pig`
  - `cat cow > grep pig`
  - `grep pig <cow`
  - `grep pig >cow`

94. 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/fil ; mv x/./fil x/../../me/./y
```
- the directory `x` now contains only a file named `y`
 - there is a second copy of the file `fil` in the file named `y`
 - the command fails because the path `x/../../me` does not exist
 - the command fails because the path `x/./fil` does not exist
 - the directory `x` is still empty
95. If `foo` is a sub-directory that contains only the file `bar`, what happens after this command: `mv foo/./bar foo/../../me`
- 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 command fails because the name `foo/./bar` does not exist
 - the directory `foo` is now empty
 - the directory `foo` now contains only a file named `me`
96. How many lines are in the file `bar` after this command line:
- ```
echo hi >x ; echo ho >>x ; cat x x >bar
```
- 2
  - 1
  - 6
  - 0
  - 4
97. In a manual page **SYNOPSIS** section, ellipsis (three dots) (`...`) mean:
- the parent directory
  - no special meaning
  - something that is repeated
  - a hidden directory
  - something that is optional
98. In an empty directory, what is the output on your screen after this command line:
- ```
ls nosuchfile 2>out
```
- 2 not found
 - `nosuchfile`
 - `nosuchfile 2 not found`
 - `nosuchfile not found`
 - no output
99. Which pathname almost always leads to the same file named: `/etc/passwd`
- `/etc/etc/./passwd`
 - `/etc/passwd/.`
 - `/etc/./passwd`
 - `./etc/./passwd`
 - `./etc/passwd`
100. In the output of the command `ls -a`, the one-character name `.` signifies what?
- The current directory.
 - The parent directory.
 - The ROOT directory.
 - A current file.
 - A name with an unprintable character.
101. If `/etc/shadow` is a file name, which pathname always leads to the same file?
- `../../etc/./shadow`
 - `/etc/shadow/../../.`
 - `/etc/shadow/./.`
 - `/etc/../../shadow`
 - `../etc/shadow`

102. Which command line displays the contents of the Unix **passwd** file one page at a time?
- a. `/etc/passwd | less` b. `less /etc/passwd`
 c. `cat less | /etc/passwd` d. `/etc/passwd cat less`
 e. `cat /etc/passwd less`
103. Which command line lists all possible utilities available for compiling programs?
- a. `grep 'compile' /etc/` b. `find compile`
 c. `locate compile` d. `man compile`
 e. `man -k compile`
104. What is your HOME directory?
- a. The top directory of the Unix/Linux/BSD/OSX file system tree
 b. The directory named **/home**
 c. This is where "root" goes when "root" logs in to the system
 d. The directory into which you are placed when you first log in
 e. The directory that your shell is in now
105. How many arguments and options are there to the command: `wc -wc wc`
- a. Two command name arguments and two bundled options.
 b. Two command line arguments, one of which contains 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 options, no arguments.
106. What is the possible output on your screen of this command line:
`echo wc >date ; sort date >date ; cat date`
- a. `1 6 28 date`
 b. no output
 c. `Fri Mar 16 12:00:00 EST 2012`
 d. `wc`
 e. `1 6 29 date`
107. The option to `ls` that shows which names are directories is:
- a. `-l` b. `-a` c. `-l` d. `-d` e. `-i`
108. If file **a** contains 2 lines, and file **b** contains 3 lines, then how many lines are in file **c** after this command line:
`sort a b >c ; cat a >>b ; sort c b >c a`
- a. 8 b. 0 c. 5 d. 7 e. 12
109. 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`
- a. the directory **mt** now contains only a file named **bar**
 b. there is a second copy of the file **foo** in the file named **bar**
 c. the command fails because path `../me/bar` does not exist
 d. the directory **mt/..** now contains a file named **bar**
 e. the command fails because path `./mt/./foo` does not exist

110. In an empty directory, what is the output on your screen after this command line:
`touch a b .1 .2 ; echo .??*`
- a. `a b`
 b. `.. a b .1 .2`
 c. `.??*`
 d. `.. .1 .2`
 e. an error message from **echo** saying `.??*` does not exist
111. To leave a shell and let the terminal window close, type:
- a. `exit` b. `quit` c. `[CTRL-C]`
 d. `q` e. `bye`
112. 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. 200 b. 60 c. 160 d. 100 e. 40
113. What is the output of this command line in an empty directory:
`touch 1 2 3 .a .ab .abc ; echo [.*]`
- a. an error message from **echo** saying `[.*]` does not exist
 b. `[.*]`
 c. `.a .ab .abc`
 d. `.. .a .ab .abc`
 e. no output
114. If **foo** is a sub-directory that contains only the file **bar**, what happens after this command: `mv foo/bar foo/moo`
- a. there is only the file named **moo** in the directory now
 b. the command fails because **bar** is not a directory
 c. an empty file named **moo** is created
 d. the command fails because the name **moo** does not exist
 e. there is a second copy of the file **bar** in the file named **moo**
115. What do you do to erase an entire line of typing in the shell?
- a. type `[CTRL-C]`
 b. type `[CTRL-U]`
 c. type `[CTRL-D]`
 d. type `[CTRL-W]`
 e. select the line with the mouse and use the **DEL** key
116. What command can you use to delete a directory that isn't empty?
- a. `deldir -r dir` b. `rmdir -r dir`
 c. `rm -r dir` d. `deltree -r dir`
 e. `del -r dir`
117. Given the pathname **a/b/c**, the *basename* of this pathname is:
- a. `c` b. `b/c` c. `a` d. `b` e. `a/b`

118. If **foo** is a sub-directory that contains only the file **bar**, what happens after this command: **cp foo/bar ./foo/./me**
- there is a second copy of the file **bar** in directory **foo**
 - there is a second copy of the file **bar** in the file named **me**
 - the directory **foo** now contains only a file named **me**
 - the directory **foo** is now empty
 - the command fails because the name **foo/bar** does not exist
119. What is the result of this exact command line: **cat /foo bar**
- all the files under directory **/foo** with the name **bar** will be displayed
 - 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
 - the two text strings **/foo** and **bar** will be displayed
120. 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
  - 80
  - 0
  - 70
  - 120
121. If file **a** contains 2 lines, and file **b** contains 3 lines, then how many lines are output on your screen by this: **cp b a | head**
- 3 followed by 2
  - 3
  - 2 followed by 3
  - no output
  - 2
122. If my current directory is **/home**, which of these pathnames is equivalent to the pathname **/home/a/b/c**?
- ../home/b/c**
  - ../home/a/b/c**
  - ./home/a/b/c**
  - /a/b/c**
  - ../a/b/c**
123. What is the output of this command line in an empty directory:
- ```
touch 1 2 3 .a .b .c ; echo .??*
```
- .a .b .c**
 - an error message from **echo** saying **.??*** does not exist
 -a .b .c**
 - ... 1 2 3 .a .b .c**
 - .??***
124. What would you type to find the string **tony** in the file **/etc/passwd**?
- cat tony /etc/passwd**
 - grep tony /etc/passwd**
 - find /etc/passwd -name tony -print**
 - grep /etc/passwd tony**
 - find /etc/passwd -user tony -print**

125. 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 -n 4 | head -n 1
```
- 8
  - 6
  - 4 4
  - 1 1
  - 6 6
126. In an empty directory, what is the output on your screen after this command line:
- ```
ls 2>/dev/null nosuchfile
```
- no output
 - ls: 2>/dev/null nosuchfile: No such file or directory**
 - nosuchfile**
 - ls: nosuchfile: No such file or directory**
 - ls: /dev/null: No such file or directory**
127. What would you see if you typed this command: **cat /foo**
- The contents of the file **foo** located in your HOME directory
 - The contents of your directory named **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 your subdirectory named **foo**
128. 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**
129. The shell expands a leading tilde (~) in a pathname (e.g. **~/foo**) to be:
- the parent directory
 - your HOME directory
 - the current directory
 - the directory **/root**
 - the ROOT directory
130. In an empty directory, how many arguments are passed to the **wc** command in this command line: **date >o1 ; touch a1 b2 out >o1 ; wc o***
- 5
 - 4
 - 3
 - 2
 - 1
131. In an empty directory, what is the output on your screen after this command line:
- ```
echo hi >a ; sort * 1>/dev/null
```
- a**
  - no output
  - sort: 1>/dev/null: No such file or directory**
  - sort: \*: No such file or directory**
  - hi**
132. If the current directory contains 10 visible files and 15 visible sub-directories, what is the output on your screen of this command: **ls -d \*/.**
- an error message because **\*/.** does not exist
  - 15 directory names
  - 25 pathnames
  - \*/.**
  - no output

133. 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**
  - 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
  - the command fails because **bar** is not a directory
134. 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 ../home/me/../../etc/passwd ./me/./foo`
  - `cp me/../../etc/passwd me/foo`
  - `cp ../etc/passwd ../me/foo`
135. 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
  - 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
  - there is a copy of the file named **foo** in the file named **bar**
136. 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/.`
137. If **cow** is a sub-directory that contains only the file **dog**, what happens after this command: `mv cow/dog cow/./cat`
- the command fails because the name **cat** does not exist
  - the command fails because the name **cow/./cat** does not exist
  - the directory **cow** is now empty
  - there is a second copy of the file **dog** in the file named **cat**
  - the directory **cow** now contains only a file named **cat**
138. What is the output of this command line in an empty directory:  
`touch .1 .2 .3 4 5 6 ; echo .*`
- `.1 .2 .3 4 5 6`
  - `.*`
  - `4 5 6`
  - `...1 .2 .3`
  - an error message from **echo** saying `.*` does not exist

139. What can you do to get back (redo) the last command you typed?
- Use the "PageUp" key.
  - Type `[CTRL]-[ALT]-[UP]`
  - Type `[ALT]-[F2]`
  - Use the "UpArrow" key.
  - Type `[CTRL]-[BACKSPACE]`
140. Which of these statements is true?
- The **file** command creates a new, empty file in the current directory
  - To erase an entire line of typing, type `[ALT]-[DELETE]`.
  - Command **apropos** is an exact synonym for command **man**.
  - To indicate End-of-File (no more input) to a program, type `[CTRL]-[D]`.
  - To interrupt a Unix process from the keyboard, type `[CTRL]-[D]`.
141. How do you search for the word **nongraphic** in the man page for **ls**?
- type `man ls -nongraphic` at the shell
  - type `man ls` at the shell, then `^F` (CTRL-F), then **nongraphic**
  - type `man -k nongraphic` at the shell
  - type `man ls` at the shell, then `/nongraphic`
  - type `man nongraphic | grep ls` at the shell
142. What is the output of this command line in an empty directory:  
`touch .a .b .c ; echo [.*]`
- an error message from **echo** saying `[.*]` does not exist
  - `[.*]`
  - `...a .b .c`
  - `.a .b .c`
  - no output
143. If **/etc/passwd** is a file name, which pathname always leads to the same file?
- `./etc/./passwd`
  - `/etc/./passwd`
  - `/etc/passwd/.`
  - `./etc/passwd`
  - `/etc/etc/./passwd`
144. How many lines are in file **out** after this command line:  
`echo hi >dog >out >cat`
- 4
  - 3
  - 1
  - 2
  - 0
145. 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 23`
  - `1 .1 23 .23`
  - `1 .1 23 .23 456`
  - `[12]*`
146. How do I search for the string **foo** in the text display output from the **man** command?
- `@foo`
  - `search foo`
  - select "Search" in the menu
  - `find foo`
  - `/foo`

147. The output of the **tree** command is:
- the tree of users logged in to the system
  - a recursive list of users logged in to the system
  - an indented, recursive list of directories and their contents
  - the tree of files under your HOME directory
  - the tree of files under the ROOT directory
148. In an empty directory, how many lines are in file **out** after this command line:  
`ls . .. nosuchfile 2>out`
- 0
  - 1
  - 4
  - 2
  - 3
149. In an empty directory, what is the output on your screen after this command line:  
`ls 1>/dev/null nosuchfile`
- `ls: /dev/null: No such file or directory`
  - `nosuchfile`
  - no output
  - `ls: nosuchfile: No such file or directory`
  - `ls: 1>/dev/null nosuchfile: No such file or directory`
150. If I am in directory **/home/me** and **mt** is an empty sub-directory, what is true after this command line:  
`touch ./mt/foo ; mv mt/./foo mt/./../me/./y`
- the directory **mt** now contains only a file named **y**
  - there is a second copy of the file **foo** in the file named **y**
  - the command fails because the path **mt/./foo** does not exist
  - the directory **mt** is still empty
  - the command fails because the path **mt/./../me** does not exist
151. Which command pipeline outputs the count of the number of manual page titles that contain the keyword "sort"?
- `man sort | wc`
  - `man sort ; wc`
  - `wc -k sort`
  - `wc man sort`
  - `man -k sort | wc`
152. In the output of the command `ls -a`, a dot (period) that *begins* a name signifies what?
- The current directory.
  - A name that is hidden.
  - The parent directory.
  - A current file.
  - A name with an unprintable character.

153. 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
  - there is a second copy of the file **bar** in the file named **me**
  - the command fails because the name **me** does not exist
  - the command fails because the name `./foo/bar` does not exist
  - the directory **foo** now contains only a file named **me**
154. What is the *current directory*?
- The directory that your shell (or any Unix process) is in now
  - The directory named `..` (dot dot)
  - This is where "root" goes when "root" logs in to the system
  - The directory into which you are placed when you first log in
  - The directory named **/current**
155. If a shell token with a GLOB pattern contains two slashes, how many slashes can be in each matched pathname?
- exactly two
  - one or two
  - two or more
  - zero, one, or two
  - one, two, or more
156. Which command line below does *not* show any lines from inside the file **out**?
- `head out`
  - `sort out`
  - `more out`
  - `tail out`
  - `wc out`
157. In an empty directory, how many lines are in file **foo** after this command line:  
`ls nosuchfile . .. 2>foo`
- 1
  - 4
  - 0
  - 2
  - 3
158. In an empty directory, how many words are in file **pig** after this command line:  
`touch pig pig ; ls >pig`
- 4
  - 3
  - 2
  - 0
  - 1
159. What is the Unix user name for the Super-User account?
- root**
  - superuser**
  - master**
  - alterego**
  - administrator**
160. If a shell GLOB pattern fails to match anything, what happens by default? The shell:
- removes the pattern and passes nothing
  - passes the pattern unchanged to the command
  - gives an error message and does not execute
  - gives a warning message but continues
  - returns the closest match to the pattern
161. 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`
- `0 0 0 cat`
  - `2 2 4 cat`
  - `1 1 3 cat`
  - no output
  - `1 1 2 cat`

162. What is the output on your screen of this command line:  
`echo pig >one ; echo bat | tail one`  
 a. `bat` followed by `pig`                      b. `pig`  
 c. `pig` followed by `bat`                      d. an error message  
 e. `bat`
163. Which of these command line will make file `foo` contain all of the content of file `a` followed by all of the content of file `b`?  
 a. `mv a b >foo`  
 b. `cp a b >foo`  
 c. `echo a b >foo`  
 d. `cp a >foo ; cp b >>foo`  
 e. `cat a >foo ; cat b >>foo`
164. What is in the file `bar` after this command line:  
`echo hi >x ; echo ho >x ; mv x y >bar`  
 a. `hi`                                              b. no such file (nonexistent)  
 c. nothing (empty file)                      d. `hi` followed by `ho`  
 e. `ho`
165. What is the output on your screen after this command line:  
`echo hi >a ; ls a > wc`  
 a. 2                                              b. 1 1 3                                              c. no output  
 d. 3                                              e. 1 1 2
166. In a manual page **SYNOPSIS** section, square brackets ([]) mean:  
 a. something that is optional                      b. something that is repeated  
 c. no special meaning                      d. a GLOB pattern matching a list  
 e. an arithmetic expression
167. What is true about this command line: `date >ls ; ls -ls ls >wc`  
 a. The file `wc` has one line in it.  
 b. The shell finds and executes three different commands.  
 c. The `ls` command is executed more than once.  
 d. The `wc` command counts the output of the `ls` command.  
 e. The `ls` command receives the output of `date` on standard input.
168. Which command below is the best way to find a line containing an asterisk (\*) in the file named `foo`?  
 a. `fgrep foo [*]`                                              b. `fgrep '*' foo`  
 c. `fgrep * foo`                                              d. `fgrep /* foo`  
 e. `fgrep foo "*"`
169. 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. no output                                              c. 2  
 d. 0                                              e. 3

170. What is in file `foo` after this command line: `echo 1 2 >foo 3`  
 a. nothing (empty file)                      b. 3  
 c. 1 2                                              d. `echo 1 2`  
 e. 1 2 3
171. If you type the command `sleep 60`, which **CTRL** key will **interrupt** it and take you back to the command prompt?  
 a. `^U`                      b. `^R`                      c. `^D`                      d. `^I`                      e. `^C`
172. In an empty directory, what is the output on your screen after this command line:  
`echo hi >a ; ls nosuchfile 2>/dev/null`  
 a. `a`  
 b. no output  
 c. `ls: 2>/dev/null: No such file or directory`  
 d. `ls: nosuchfile: No such file or directory`  
 e. `nosuchfile`
173. What is the output of this command line in an empty directory:  
`touch .12 .345 .6789 ; echo .??*`  
 a. `.??*`  
 b. `. . . .12 .345 .6789`  
 c. no output  
 d. `.12 .345 .6789`  
 e. an error message from `echo` saying `.??*` does not exist
174. 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`?  
 a. `cp ../etc/passwd ./me/foo`  
 b. `cp ../home/me/./etc/passwd ./me/./foo`  
 c. `cp ../etc/passwd ../me/foo`  
 d. `cp ../../etc/passwd /me/foo`  
 e. `cp ./me/./etc/passwd ../home/me/foo`
175. How many arguments does the shell pass to this `echo` command:  
`echo one two three >four five`  
 a. 5                      b. 3                      c. 2                      d. 4                      e. 6
176. If directory `dir` contains only these four three-character file names: `.on`, `.tw`, `.th`, `.f.`, then what is the output on your screen of this command line:  
`echo dir/*`  
 a. `dir/.f.`  
 b. `dir/ dir/.. dir/.on dir/.tw dir/.th dir/.f.`  
 c. `dir/*`  
 d. no output  
 e. `dir/.on dir/.tw dir/.th`

177. Which command line displays only the non-hidden names in the current directory that contain the case-insensitive word **me** (and no other names)?
- `echo ?[MmEe]?`
  - `echo *(M,m,E,e)*`
  - `echo *[me]*`
  - `echo *[Mm][Ee]*`
  - `echo *[MmEe]*`
178. 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 -n 4 | head -n 1
```
- 02
 - 96 96
 - 98
 - 04 04
 - 96
179. What is the output on your screen of this command line:
- ```
echo wc >wc ; wc wc >wc ; cat wc
```
- 0 0 0 wc
  - 1 1 3 wc
  - 1 1 2 wc
  - no output
  - wc
180. 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 directory **dir** now contains only a file named **old**
 - there is a second copy of the file named **new** in the file named **old**
 - the command fails because the path **../me/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
181. 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
```
- 100
  - 0
  - 30
  - 50
  - 60
182. If my current directory is **/lib**, which of these pathnames is equivalent to the file name **/lib/foo**?
- ./foo**
  - ../foo**
  - ../lib/foo/.**
  - /foo**
  - ./lib/foo**
183. 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** is still empty
  - the directory **mt** now contains a file named **foo**
  - the command fails because **mt/bar** is not a directory
  - the directory **bar** now contains a file named **foo**
  - the directory **mt** now contains a file named **bar**

184. If **pig** is a sub-directory that contains only the file **dog**, what happens after this command: `mv pig/dog pig/././cat`
- there is a second copy of the file **dog** in the file named **cat**
  - the command fails because the name **cat** does not exist
  - the directory **pig** now contains only a file named **cat**
  - the directory **pig** is now empty
  - the command fails because the name **pig/././cat** does not exist
185. Which command line displays only the non-hidden names in the current directory that contain the letter **a** (and no other names)?
- `echo *a*`
  - `echo a*`
  - `echo ?a?`
  - `echo [a]`
  - `echo *a`
186. 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 b | sort a`
- 3 followed by 2
  - 2 followed by 3
  - 2
  - 3
  - 5
187. In an empty directory, what is the output on your screen after this command line:
- ```
touch a ; ls >wc -l
```
- 2
 - 3
 - 1
 - no output
 - 0
188. What does *quoting* mean on a shell command line?
- setting the **PS1** variable to be your shell prompt
 - using more than one pathname argument to a command, e.g. `rm a b c`
 - turning off the special meaning of shell meta-characters
 - typing a "control" character using the **[CTRL]** key
 - using a leading tilde ("**~**") on a pathname to mean your HOME directory
189. In an empty directory, how many arguments are passed to the **rm** command in this command line: `date >a1 ; touch a2 ba ca >all ; rm a*`
- 2
 - none
 - 3
 - 4
 - 1
190. What is the output on your screen of this command line:
- ```
echo hi >hi ; head hi >hi ; wc hi
```
- 1 1 2 hi
  - 0 0 0 hi
  - 2 2 4 hi
  - 1 1 3 hi
  - no output
191. 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
  - 20
  - 80
  - 50
  - 0
192. 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
```
- 21
 - 50
 - 20
 - 0
 - 30

193. Which command line lists all possible utilities available for compiling programs?
- `find compile`
 - `locate compile`
 - `grep compile /etc/`
 - `apropos compile`
 - `man compile`
194. 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`
 - an error message: `mv: target 'c' is not a directory`
 - the files `a` and `b` are moved into the directory `c`
195. Which of these command line will make `bar` contain all of the content of `f1` followed by all of the content of `f2`?
- `echo f1 f2 >bar`
 - `cat f1 f2 >bar`
 - `mv f1 f2 >bar`
 - `wc f1 f2 >bar`
 - `cp f1 f2 >bar`
196. 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 -n 5 | head -n 1`
- 7
 - 1 1
 - 5 5
 - 9
 - 1
197. Which command below is the best way to find a line containing a question mark (?) in the file `/etc/passwd`?
- `search '?' /etc/passwd`
 - `grep './?' /etc/passwd`
 - `grep '?' /etc/passwd`
 - `find '?' /etc/passwd`
 - `grep /etc/passwd '?'`
198. If `pig` is a sub-directory that contains only the file `dog`, what happens after this command: `mv pig/dog pig/./cat`
- there is a second copy of the file named `dog` in the file named `cat`
 - the command fails because the name `pig/./cat` does not exist
 - the directory `pig` is now empty
 - the directory `pig` now contains only a file named `cat`
 - the command fails because the name `cat` does not exist
199. 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`
 - the command fails because the path `../myhome/cat` does not exist
 - there is a second copy of the file `fil` in the file named `cat`
 - the command fails because the path `sub/./fil` does not exist
 - the directory `sub/..` now has a file named `cat` in it

200. How many words are in file `out` after this command line:
`echo one >two >three >out`
- 0
 - 3
 - 2
 - 1
 - 4
201. In an empty directory, how many words are in file `out` after this command line:
`touch 1 2 3 2 1 ; ls >out`
- 5
 - 0
 - 3
 - 4
 - 6
202. 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 command fails because the path `./mt/./cat` does not exist
 - the directory `mt` now has a file named `dog` in it
 - the directory `mt` now contains two files
 - the file named `cat` is now renamed to `dog`
 - the directory `mt` is still empty
203. Which command line does *not* show any lines from inside the file `bat`?
- `sort bat`
 - `less bat`
 - `tail bat`
 - `ls bat`
 - `head bat`
204. What is the output on your screen after this command line:
`echo hi >ls ; cat ls > wc`
- ls
 - no output
 - hi
 - 1 1 2
 - 1 1 3
205. How many lines are in the file `out` after this command line:
`echo hi >x ; echo ho >>x ; cat x x x >out`
- 2
 - 0
 - 3
 - 6
 - 1
206. 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*`
- 3
 - 4
 - none
 - 2
 - 1
207. If my current directory is `/home`, which of these pathnames is equivalent to the pathname `/home/a/b/c`?
- `../a/b/c`
 - `/a/b/c`
 - `../home/b/c`
 - `./home/a/b/c`
 - `./a/b/c`
208. What is the output of this command line in an empty directory: `echo *`
- *
 - ..
 - no output
 - an error message from `echo` saying `*` does not exist
 - .

209. 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`
- there is a second copy of the file `foo` in the file named `bar`
 - the command fails because the path `./mt/../foo` does not exist
 - the command fails because the path `../me/bar` does not exist
 - the directory `mt` now contains only a file named `bar`
 - the parent directory of `mt` now contains a file named `bar`
210. 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 -n 4 | head -n 1`
- 7
 - 8
 - 9
 - 6
 - 5
211. Which `CTRL` key will erase a full line of typing in a terminal window?
- `^C`
 - `^D`
 - `^R`
 - `^I`
 - `^U`
212. Give the minimum number of directories in this pathname: `/a/b/c/d`
- 5
 - 4
 - 3
 - 2
 - 1
213. If you type the command `cat`, which `CTRL` key will send an `EOF` and take you back to the command prompt?
- `^D`
 - `^C`
 - `^U`
 - `^R`
 - `^E`
214. 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 | tail -n 4 | head -n 1`
- 6
 - no output
 - 1
 - 8
 - 4
215. 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`
- 8
 - 0
 - 3
 - 5
 - 16
216. Which command line tells you the recursive count of all pathnames under the current directory and all subdirectories?
- `find | wc`
 - `wc *`
 - `ls | wc`
 - `wc "$PWD"`
 - `wc .`
217. 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 ../etc/passwd ./me/foo`
 - `cp ../home/me/../etc/passwd ./me/../foo`
 - `cp ./me/../etc/passwd ../home/me/foo`
 - `cp ../../etc/passwd /me/foo`

218. 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`
- 7
 - 5
 - 12
 - 24
 - 0
219. 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`
220. How many lines are in the file `out` after this command line:
`date >f ; ls f >>f ; cat f f >out`
- 6
 - 4
 - 1
 - 2
 - 0
221. Which Unix command line deletes a directory and everything inside it?
- `deltree -all dir`
 - `rm -all dir`
 - `rmdir -all dir`
 - `rmdir -r dir`
 - `rm -r dir`
222. In an empty directory, what is the output on your screen of this command line:
`echo hi >foo >bar ; cat foo`
- `hi`
 - no output
 - `hi >foo >bar`
 - `hi >foo`
 - `cat: foo: No such file or directory`
223. In an empty directory, how many words are in file `cow` after this command line:
`touch dog dog cat ; ls >cow`
- 4
 - 0
 - 3
 - 2
 - 1
224. In an empty directory, how many words are in file `out` after this command line:
`echo hi >a ; ls >out`
- 4
 - 2
 - 3
 - 0
 - 1
225. In a directory containing one file named `dog`, what is the output on your screen after this command line: `1>/dev/null ls *`
- `bash: 1>/dev/null: command not found`
 - no output
 - `*`
 - `dog`
 - `ls: *: No such file or directory`
226. What command displays the sizes of files in the current directory?
- `ls -p`
 - `ps -l`
 - `ps -s`
 - `ls -l`
 - `cat -s`

227. Which of the command lines below can generate a non-empty file?
- a. `ls foo >foo`
 - b. `cat foo >foo`
 - c. `sort foo >foo`
 - d. `grep 'foo' foo >foo`
 - e. `tail foo >foo`
228. What is the output on your screen of this command line:
`echo bat >pig ; echo one | tail pig`
- a. `one`
 - b. `bat`
 - c. an error message
 - d. `one` followed by `bat`
 - e. `bat` followed by `one`
229. **Did you read all the words of the test instructions on page one?**
- a. **Jes** (*Yes - Esperanto*)
 - b. **Sim** (*Yes - Portuguese*)
 - c. **Taip** (*Yes - Lithuanian*)
 - d. **Igen** (*Yes - Hungarian*)
 - e. **Tak** (*Yes - Polish*)

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