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LAB Section:

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One-Answer Multiple Choice 44 Questions**Weight 15%**

- ☞ 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.
- ☞ Leave the last question about reading all these test instructions blank. No answer. **Neniu**

1. [22/140] What is the output on your screen of this unquoted command line:
`mkdir z ; touch a z/a1 z/a2 a2 ; find z -name a?`

- a. `z/a2` b. `a?` c. no output
 d. `z/a1 z/a2` e. `a1 a2`

2. [37/140] File **a** contains 2 lines. File **b** contains 3 lines. How many lines are output on your screen by this: `echo a ; cat a | echo b`

- a. 2 b. 4 c. 5 d. 1 e. 7

3. [41/139] In an empty directory, how many words are in file **c** after this:
`touch .a .b .c ; ls >c`

- a. 4 b. 3 c. 0 d. 2 e. 1

4. [44/139] What does this command print: `awk '{print $NF}'`

- a. field number **N** followed by field number **F**
 b. the first field
 c. the shell variable **\$NF**
 d. the number of fields
 e. the last field

5. [58/139] File **a** occupies one disk block. How many disk blocks are in use after this sequence of commands:

- `cp a b ; ln b c ; cp c d ; cp a c`
 a. 2 b. 4 c. 1 d. 0 e. 3

6. [59/140] If `/bin/foo` is a program that outputs **mom** and `/usr/bin/foo` is a program that outputs **dad** what would be the output on your screen of this three command sequence:

`PATH=/bin/foo:/usr/bin/foo:/usr ; cd /bin ; foo`

- a. **dad** followed by **mom**
 b. **mom** followed by **dad**
 c. **mom**
 d. **dad**
 e. **bash: foo: command not found**

7. [59/138] Which command line outputs `/bin/date`?

- a. `cd /bin ; ls date` b. `touch /bin/date`
 c. `cat /bin/date` d. `cd /bin ; echo date`
 e. `which date`

8. [60/139] Create a symbolic link under `/lib` named **sym** that has target **dog**

- a. `ln -s 'dog' '/lib/sym'`
 b. `ln -s dog /sym/lib`
 c. `ln -s '/lib/dog' /lib/sym`
 d. `ln -s /lib/sym '/lib/dog'`
 e. `ln -s /lib/sym 'dog'`

9. [62/138] In an empty directory, how many words output on your screen after this: `echo It's "redirected" >a isn't it? >b ; ls`

- a. 1 b. 3 c. 2 d. 0 e. 4

10. [65/138] If `/bin/bat` is a program that outputs **foo** and `/usr/bin/bat` is a program that outputs **bar** what would be the output on your screen of this three command sequence:

`PATH=/etc:/usr:/usr/bin:/bin ; cd /bin ; bat`

- a. **bar**
 b. **foo**
 c. **bash: bat: command not found**
 d. **bar** followed by **foo**
 e. **foo** followed by **bar**

11. [65/137] Which command touches one single file (single argument)?
- `touch It's a mystery that really isn't`
 - `touch 'It's a mystery that really isn't'`
 - `touch "It's a mystery that really isn't"`
 - `touch 'It\'s a mystery that really isn\'t'`
 - `touch It\'s a mystery that really isn\'t`
12. [70/139] What is true about this output from `ls -ild foo bar`?
- ```
816 -rwxr-xr-x 2 root root 3 Jan 24 01:03 foo
816 -r--r--r-- 2 root root 3 Jan 24 01:03 bar
```
- `foo` and `bar` are names for different files
  - `foo` and `bar` are two of three names for this file
  - `foo` and `bar` are names for the same file
  - `foo` and `bar` each have three names (six names total)
  - this output is not possible
13. [72/139] What is the output of this in an empty directory:
- ```
touch 1 133 .13 2 213 3 03 93 .31 ; ls [13]?
```
- an error message from `ls` saying `[13]?` does not exist
 - `1 3`
 - `1 133 3`
 - `[13]?`
 - `133`
14. [73/140] File `a` contains 2 lines. File `b` contains 3 lines. How many lines are in file `c` after this command line:
- ```
ln a d ; ln d c ; cat a b d >c
```
- 5
  - 2
  - 3
  - 4
  - 0
15. [73/139] What is the output of this in an empty directory:
- ```
touch 123 321 12 1 ; echo [123]
```
- `123 321`
 - an error message from `echo` saying `[123]` does not exist
 - `1 12 123`
 - `123`
 - 1
16. [77/137] How many arguments are passed to the command by the shell:
- ```
foo "bar "z " bin 'luk c' " wug'i "win' 9 8
```
- 4
  - 5
  - 6
  - 11
  - 7

17. [77/139] Which pathname always leads to the same file named: `/bin/rm`
- `/bin/rm/../../../../`
  - `/bin/rm/./.`
  - `/bin/../../../../rm`
  - `/../../../../bin/./rm`
  - `././bin/rm`
18. [78/140] File `a` occupies one disk block. How many disk blocks are in use after this sequence of commands:
- ```
cp a b ; ln b c ; cp c d ; ln c e ; cp a d ; rm a c
```
- 1
 - 2
 - 3
 - 4
 - 0
19. [79/140] File `a` occupies one disk block. How many disk blocks are in use after this sequence of commands:
- ```
cp a b ; ln b c ; ln a e ; cp e c ; rm a b
```
- 4
  - 3
  - 1
  - 2
  - 0
20. [81/139] Dereference the following symlink `sym` into its equivalent absolute path: `ln -s /etc/trg /tmp/a/b/sym`
- `/etc/trg`
  - `/etc/a/trg`
  - `/tmp/trg`
  - `/etc/a/b/sym`
  - `/etc/b/sym`
21. [82/139] File `a` contains 2 lines. File `b` contains 3 lines. How many lines are in file `c` after this command line:
- ```
cat a b >c ; cat a >>b ; sort c b >c a
```
- 5
 - 8
 - 12
 - 0
 - 7
22. [82/139] If a shell GLOB pattern fails to match anything, 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
23. [82/140] In an empty directory, what is in file `foo` after this:
- ```
echo hi >foo ; ls bar >foo
```
- nothing (empty file)
  - `foo`
  - `ls: cannot access bar`
  - `hi`
  - `bar`

24. [85/140] How many arguments are passed to the command by the shell:  
`echo It's not hard; it's logical.`  
 a. 3            b. 4            c. 5            d. 6            e. 2
25. [87/140] File **a** occupies one disk block. How many disk blocks are in use after this sequence of commands:  
`ln a b ; ln b c ; cp c d ; ln c e ; rm a d`  
 a. 2            b. 0            c. 4            d. 1            e. 3
26. [87/140] In `/bin` using `ls -l` shows a symbolic link `foo -> dir/bar` then dereference the absolute path of `foo` with no symbolic links:  
 a. `/bin/dir/bar/foo`            b. `/bin/dir/bar`  
 c. `/bin/foo/dir/bar`            d. `/foo/dir/bar`  
 e. `/dir/bar`
27. [88/140] Given this long listing:  
`drwxr-xr-x 2048 bin bin 4096 Jan 2 14:22 dir`  
 How many subdirectories lie immediately under `dir`?  
 a. 4096  
 b. 2048  
 c. 4094  
 d. there is not enough information shown to answer the question  
 e. 2046
28. [89/138] Dereference the following symlink `sym` into its equivalent absolute path: `ln -s ../../a/../../trg /tmp/a/b/sym`  
 a. `/tmp/a/b/sym`            b. `/tmp/a/trg`  
 c. `/tmp/b/trg`            d. `/tmp/trg`  
 e. `/tmp/b/sym`
29. [91/139] If `/bin/foo` is a program that outputs `mom` and `/usr/bin/foo` is a program that outputs `dad` what would be the output on your screen of this three command sequence:  
`PATH=/bin/foo:/usr/bin/foo:/usr ; cd /bin ; ./foo`  
 a. `mom` followed by `dad`  
 b. `dad`  
 c. `mom`  
 d. `dad` followed by `mom`  
 e. `bash: ./foo: no such file or directory`

30. [91/140] If my current directory is `/bin`, which of these pathnames is equivalent to the file name `/bin/ls`?  
 a. `ls/.`            b. `./bin/ls`  
 c. `../bin/ls/.`            d. `/root/bin/ls`  
 e. `../../bin/ls`
31. [91/140] What is the link count of directory `x` after this set of successful commands?  
`mkdir x ; cd x ; touch a ; ln a b ; mkdir c d`  
 a. 5            b. 4            c. 2            d. 3            e. 6
32. [95/138] What is the output of this in an empty directory:  
`date >.abc ; touch .dog ; echo .*`  
 a. `.. .abc .dog`  
 b. `.*`  
 c. `.dog`  
 d. an error message from `echo` saying `.*` does not exist  
 e. `.abc .dog`
33. [98/139] Which line allows the shell to find the `assignment07check` command?  
 a. `PATH=whereis assignment07check`  
 b. `PATH=$PATH:~idallen/cst8207/17f/assignment07`  
 c. `PATH=which assignment07check`  
 d. `PATH=assignment07check:$PATH`  
 e. `PATH=$PATH:assignment07check`
34. [103/140] What command recursively finds all pathnames with a basename that begins with `foo`?  
 a. `find foo* -ls`            b. `find -name 'foo*'`  
 c. `find foo* -name`            d. `find -name "foo@"`  
 e. `find foo@ -print`
35. [104/140] If files occupy one disk block, how many disk blocks will the system free up if I remove these four file names:  
`111 -rw-r--r-- 2 me me 1 Jan 1 1:00 a`  
`111 -rw-r--r-- 2 me me 1 Jan 1 1:00 b`  
`222 -rw-r--r-- 3 me me 1 Jan 1 1:00 c`  
`222 -rw-r--r-- 3 me me 1 Jan 1 1:00 d`  
 a. 2            b. 1            c. 0            d. 3            e. 4

36. [105/140] File **a** contains 2 lines. File **b** contains 3 lines. How many lines are output on your screen by this command line: `cat b | touch a`

- a. 3                      b. 1                      c. no output  
d. 2                      e. 5

37. [110/140] If files occupy one disk block, how many disk blocks will the system free up if I remove these four file names:

```
111 -rw-r--r-- 1 me me 1 Jan 1 1:00 a
222 -rw-r--r-- 1 me me 1 Jan 1 1:00 b
444 -rw-r--r-- 2 me me 1 Jan 1 1:00 c
444 -rw-r--r-- 2 me me 1 Jan 1 1:00 d
```

- a. 2                      b. 4                      c. 1                      d. 0                      e. 3

38. [111/139] If I am in directory **/etc** and **d** is an empty sub-directory, what is true after this command line:

```
touch d/foo ; mkdir d/x ; cp d/foo ./d/./x
```

- a. the directory **d** now contains only a file named **x**  
b. the command fails because the name **d/foo** does not exist  
c. there is a second copy of the file **foo** in directory **d**  
d. there is a second copy of the file **foo** in file **/etc/x**  
e. the directory **d** is now empty

39. [113/139] If files occupy one disk block, how many disk blocks will the system free up if I remove these four file names:

```
111 -rw-r--r-- 1 me me 1 Jan 1 1:00 a
222 -rw-r--r-- 1 me me 1 Jan 1 1:00 b
333 -rw-r--r-- 1 me me 1 Jan 1 1:00 c
444 -rw-r--r-- 2 me me 1 Jan 1 1:00 d
```

- a. 3                      b. 0                      c. 1                      d. 2                      e. 4

40. [116/140] If files occupy one disk block, how many disk blocks will the system free up if I remove these four file names:

```
111 -rw-r--r-- 1 me me 1 Jan 1 1:00 a
222 -rw-r--r-- 3 me me 1 Jan 1 1:00 b
222 -rw-r--r-- 3 me me 1 Jan 1 1:00 c
222 -rw-r--r-- 3 me me 1 Jan 1 1:00 d
```

- a. 1                      b. 4                      c. 3                      d. 0                      e. 2

41. [118/140] A "dangling symlink" is a symlink to:

- a. the current directory                      b. a parent directory  
c. a directory                                  d. a non-existent target  
e. a special device file

42. [120/139] If files occupy one disk block, how many disk blocks will the system free up if I remove these four file names:

```
111 -rw-r--r-- 3 me me 1 Jan 1 1:00 a
111 -rw-r--r-- 3 me me 1 Jan 1 1:00 b
222 -rw-r--r-- 3 me me 1 Jan 1 1:00 c
222 -rw-r--r-- 3 me me 1 Jan 1 1:00 d
```

- a. 2                      b. 0                      c. 4                      d. 3                      e. 1

43. [122/140] Which command displays your eight-character student account name?

- a. `echo "$USER"`                                  b. `echo "$NAME"`  
c. `echo "$ACCOUNT"`                              d. `echo "$SHELL"`  
e. `echo "$HOME"`

44. [129/140] Which command displays names starting with **foo**?

- a. `ls foo*`                                          b. `cat foo+`                                          c. `find foo%`  
d. `echo foo&`                                      e. `which foo@`