

PRINT Name: _____ LAB Section:

Test Version: 587 One-Answer Multiple Choice 223 Questions - 0 of 0%

- ☞ Read **all** the words of these instructions and **both** sides (back and front) of all pages.
- ☞ Put the three-digit **Test Version** above into **NO. OF QUESTIONS** and **NO. OF STUDENTS**
- ☞ Manage your time. Answer questions you know, first. One Answer per question.

1. What is the output on your screen after this command line:
`cd /home/ian ; mkdir a ; mkdir b ; pwd`
 - a. /home/ian/a
 - b. /home/ian
 - c. /home/ian/a/b
 - d. /b
 - e. /home/ian/b
2. Which file contains a list of file systems to mount when booting the system?
 - a. /etc/grub.conf
 - b. /var/spool
 - c. /etc/init.d
 - d. /var/log
 - e. /etc/fstab
3. 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 [a-zA-Z][a-zA-Z][a-zA-Z]`
 - b. `rm [3][3][3]`
 - c. `rm [a-zA-Z,a-zA-Z,a-zA-Z]`
 - d. `rm ???`
 - e. `rm [azAZ][azAZ][azAZ]`
4. What is the link count of directory **d** after this set of successful commands?
`mkdir d ; mkdir d/a d/b ; touch d/c d/e`
 - a. 2
 - b. 1
 - c. 3
 - d. 5
 - e. 4
5. What GRUB line do you modify to boot a machine single-user?
 - a. `kernel`
 - b. `boot`
 - c. `grub`
 - d. `initrd`
 - e. `timeout`
6. If the file **bat** contained the word **foo**, what would be the output on your screen of this two command sequence:
`PATH=/etc/passwd:/bin/ls:/bin/cat ; /bin/ls bat`
 - a. /bin/ls: bat: No such file or directory
 - b. `bat`
 - c. no output on screen
 - d. `foo`
 - e. `bash: /bin/ls: command not found`
7. What is the link count of file **foo** after this set of successful commands?
`rm foo ; touch foo ; ln foo bar ; ln bar x`
`cp bar a ; ln a b ; ln x c ; cp c d`
 - a. 3
 - b. 5
 - c. 1
 - d. 2
 - e. 4

8. Which command line displays only 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?`
9. The password **:x:** in `/etc/passwd` means:
 - a. the encrypted password is stored in the shadow file
 - b. the account is locked
 - c. the unencrypted password is stored in the group file
 - d. the password is locked
 - e. the encrypted password is **"x"**
10. What GRUB command will set a partition prefix that will prefix all file names typed without partition prefixes, e.g. `/grub/device.map`?
 - a. `title (hd0,0)`
 - b. `default=(hd0,0)`
 - c. `kernel (hd0,0)`
 - d. `root=(hd0,0)`
 - e. `root (hd0,0)`
11. What command will recursively find all pathnames (anywhere) owned by UID 99?
 - a. `find / -user 99`
 - b. `grep -name 99 /`
 - c. `ls -R 99 /`
 - d. `usermod -name 99 /`
 - e. `ls -name 99 /`
12. A "dangling symlink" is a symlink:
 - a. to a parent directory
 - b. to the current directory
 - c. to a special device file
 - d. to a non-existent target
 - e. to a directory
13. If my current working directory is `/mnt`, which command copies the group file into existing directory `/mnt/xxx` under the name `yyy`?
 - a. `cp xxx/../../../../etc/group ./xxx/yyy`
 - b. `cp ../../etc/./group /xxx/yyy`
 - c. `cp ../etc/group ../xxx/yyy`
 - d. `cp ../mnt/./xxx/./etc/group ./xxx/./yyy`
 - e. `cp ../xxx/./etc/group ../mnt/xxx/yyy`
14. What command displays the groups you are in?
 - a. `groups`
 - b. `groupprint`
 - c. `lstgroups`
 - d. `gpasswd`
 - e. `mkgroups`
15. What is contained in the local variable `$$`?
 - a. the process ID of the current shell
 - b. the cpu cost of the current session, in dollars
 - c. the first argument of the previous command line
 - d. the command name of the previous command line
 - e. `$$` is not a valid variable name

16. What is usually contained in the environment variable `$HOME`?
- the absolute path of your login home directory
 - the relative path of your login home directory
 - the absolute path of the system `/home` directory
 - the relative path of the system `/home` directory
 - the relative path of the `ROOT` directory
17. What command compares files line-by-line?
- `tar`
 - `diff`
 - `file`
 - `compare`
 - `linecmp`
18. What command sets group administrator users?
- `usermod`
 - `groupedit`
 - `passwd`
 - `gpasswd`
 - `modgroup`
19. In a directory that contains only the file `a`, what happens after this command:
`mv a b`
- an empty file named `b` is created
 - there is a second copy of the file `a` in the file named `b`
 - there is only the file named `b` in the directory now
 - the command fails because `a` is not a directory
 - the command fails because the name `b` does not exist
20. On a disk with seven partitions, give the correct partition names after you delete partition `sda2`:
- `sda1 sda2 sda3 sda4 sda6`
 - `sda1 sda2 sda3 sda4 sda6 sda7`
 - `sda1 sda2 sda3 sda4 sda5 sda6`
 - `sda1 sda3 sda4 sda5 sda6 sda7`
 - `sda1 sda2 sda3 sda4 sda5`
21. Pick the correct order of operations:
- `mkfs, fdisk, mount`
 - `mount, mkfs, fdisk`
 - `mount, fdisk, mkfs`
 - `mkfs, mount, fdisk`
 - `fdisk, mkfs, mount`
22. In an empty directory, what is the output on your screen after this command line:
`touch a b .1 .2 ; echo .??*`
- `. .. a b .1 .2`
 - `. .. .1 .2`
 - an error message from `echo` saying `.??*` does not exist
 - `.??*`
 - `a b`

23. What command will show lines containing the name `root` inside all four account files under `/etc`:
- `ls 'root' /etc/{passwd,shadow,group,gpasswd}`
 - `fdisk -l 'root' /etc/{passwd,shadow,group,gpasswd}`
 - `du 'root' /etc/{passwd,shadow,group,gpasswd}`
 - `find 'root' /etc/{passwd,shadow,group,gpasswd}`
 - `grep 'root' /etc/{passwd,shadow,group,gpasswd}`
24. What command will recursively find all pathnames in your home directory named `foo`:
- `grep -user 'foo' "$HOME"`
 - `find "$HOME" -name 'foo'`
 - `ls -R 'foo' "$HOME"`
 - `du 'foo' "$HOME"`
 - `grep 'foo' "$HOME"`
25. Which option to `ls` displays the directory itself and not its contents?
- `-R`
 - `-d`
 - `-i`
 - `-l`
 - `-a`
26. What is the link count of directory `d` after this set of successful commands?
`mkdir d ; mkdir d/a ; mkdir d/a/b ; mkdir d/a/c`
- 4
 - 5
 - 2
 - 3
 - 1
27. Given my directory `dir` and my file `dir/foo` owned by me, which permissions allow me to delete the file `dir/foo` from the directory, but not change the content (data) in the file?
- Permissions `300` on directory `dir` and `500` on file `dir/foo`.
 - Permissions `700` on directory `dir` and `200` on file `dir/foo`.
 - Permissions `600` on directory `dir` and `300` on file `dir/foo`.
 - Permissions `500` on directory `dir` and `500` on file `dir/foo`.
 - Permissions `600` on directory `dir` and `500` on file `dir/foo`.
28. Which command line displays the mounted `/home` file system?
- `grep '/home' | mount`
 - `mount /home | grep`
 - `grep mount '/home'`
 - `mount | grep '/home'`
 - `grep '/home' mount`
29. Pick the correct order of operations:
- POST, BIOS, MBR, O/S boot
 - MBR, POST, BIOS, O/S boot
 - BIOS, MBR, POST, O/S boot
 - POST, MBR, BIOS, O/S boot
 - BIOS, POST, MBR, O/S boot
30. Regarding the `-t type` option, e.g. `-t ext3`:
- you can usually omit the type when using `mount`
 - you must give the type when using `mkswap`
 - you must give the type when using `fdisk`
 - you can usually omit the type when using `mkfs`
 - you must give the type when using `swapon`

31. What is the output on your screen of this two-command sequence if run in a directory containing 8 files with names that are all the numbers from 1 to 8 inclusive: `cow="" ; echo '$cow'`
- the file names 1 through 8, surrounded by quotes
 - '\$cow'
 - *
 - \$cow
 - the file names 1 through 8
32. Under what directory are system configuration files usually stored?
- /var/log/
 - /etc
 - /log/var/
 - /grub/boot/
 - /boot/grub
33. If `foo` were a readable empty file, what would be the output on your screen of this two command sequence:
- ```
PATH=/etc/passwd:/bin/ls:/bin/cat ; /bin/cat foo
```
- /bin/cat: foo: No such file or directory
  - bash: /bin/cat: command not found
  - bash: ls: command not found
  - no output on screen
  - bash: cat: command not found
34. How does system logging work under Unix/Linux?
- processes copy logs from your \$HOME directory to the /var/spool directory
  - processes send messages to a central syslog program that writes log files
  - processes write log files into each user's \$HOME directory
  - processes send messages to the init process that inherits orphan processes
  - processes write log entries directly into the system log directory
35. On a disk with eight partitions, give the correct partition names after you delete partition `sda5`:
- sda1 sda2 sda3 sda4 sda5 sda7 sda8
  - sda1 sda2 sda3 sda4 sda5 sda6
  - sda1 sda2 sda3 sda4 sda5 sda6 sda8
  - sda1 sda2 sda3 sda4 sda6 sda7 sda8
  - sda1 sda2 sda3 sda4 sda5 sda6 sda7
36. Given my directory `dir` and my file `dir/foo` owned by me, which permissions allow me to access and change or create new content (data) in the file `dir/foo` but not delete the file?
- Permissions 200 on directory `dir` and 200 on file `dir/foo`.
  - Permissions 500 on directory `dir` and 100 on file `dir/foo`.
  - Permissions 600 on directory `dir` and 700 on file `dir/foo`.
  - Permissions 100 on directory `dir` and 200 on file `dir/foo`.
  - Permissions 400 on directory `dir` and 400 on file `dir/foo`.

37. 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 two command sequence: `PATH=/bin/foo:/usr/bin/foo:/usr ; foo`
- mom followed by dad
  - dad
  - dad followed by mom
  - bash: foo: command not found
  - mom
38. What command schedules other commands to run just *once* at some future date/time?
- schedule
  - at
  - chkconfig
  - run
  - crontab
39. 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 -3 | head -1
```
- 8
 - 7 7
 - 9
 - 3 3
 - 3
40. What is the output on your screen after this command line:
- ```
mkdir dir ; touch dir/.aa dir/.bb ; echo dir/*
```
- dir/ dir/.. dir/.aa dir/.bb
  - dir/.aa dir/.bb
  - dir/\*
  - no output on screen
  - dir/
41. 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 command fails because the path `../mt/./foo` does not exist
 - the directory `mt` now has a file named `bar` in it
 - the directory `mt` now contains two files
 - the directory `mt` is still empty
 - there is a second copy of the file named `foo` in the file `bar`
42. Why is a journaling file system better than non-journaling?
- uses less disk space to store the same files
 - supports more types of partitions
 - allows more than four primary partitions
 - contains more inodes for files and directories
 - faster file system check after system crash
43. Which is a list of signals in increasing order of strength?
- HUP KILL TERM
 - HUP TERM KILL
 - TERM HUP KILL
 - TERM KILL HUP
 - KILL HUP TERM

44. If `/bin/xxx` is a program that outputs `one` and `/usr/bin/xxx` is a program that outputs `two`, what would be the output on your screen of this two command sequence: `PATH=/usr:/usr/bin:/etc:/bin ; xxx`
- `bash: xxx: command not found`
 - `one` followed by `two`
 - `two` followed by `one`
 - `two`
 - `one`
45. If `/bin/pig` is a program that outputs `xx` and `/usr/bin/pig` is a program that outputs `foo` what would be the output on your screen of this two command sequence: `PATH=/home:/bin:/dev:/usr/bin ; pig`
- `bash: pig: command not found`
 - `xx` followed by `foo`
 - `foo`
 - `foo` followed by `xx`
 - `xx`
46. Fedora 12 has `/boot` on its own, separate, first partition. Which of these is the correct GRUB legacy path to its config file?
- `(hd0,1)/grub.conf`
 - `(hd0,0)/boot/grub/grub.conf`
 - `(hd0,1)/boot/grub/grub.conf`
 - `(hd0,0)/grub/grub.conf`
 - `(hd0,0)/grub.conf`
47. What is contained in the `/etc/fstab` file?
- a list of currently mounted file systems
 - a list of file system tables used by the `adduser` command
 - a list of file systems to mount when booting the system
 - a list of file system tables used to identify partition types
 - a list of file system tables used by the `usermod` command
48. What command shows all partition names and System IDs on the fifth disk:
- `find -l /dev/sd5`
 - `find -l /dev/sde`
 - `fdisk -l /dev/sde`
 - `mkfs -l /dev/sd5e`
 - `mount -l /dev/sd5e`
49. Rewrite `/home/me/../../you/../../etc/../../home/me/../../you/../../me/../../foo` as a simplified absolute path:
- `/foo`
 - `/home/you/foo`
 - `/etc/foo`
 - `/home/me/foo`
 - `/home/foo`

50. In an empty directory, what is the output on your screen after this command line:
- ```
touch 1 2 .foo .bar ; echo .*
```
- `1 2`
  - `.foo .bar`
  - `. .. .foo .bar`
  - an error message from `echo` saying `.*` does not exist
  - `.*`
51. How do the package managers YUM and RPM differ?
- RPM handles RPM files and YUM handles DEB files
  - RPM is more high-level than YUM and can handle dependencies
  - RPM is more high-level than YUM, but cannot handle dependencies
  - YUM is more high-level than RPM and can handle dependencies
  - YUM is more high-level than RPM, but cannot handle dependencies
52. Given the following, can user `kirk` in group `starfleet` rename `./file1` to `file2`?
- ```
d----wx--- 2 root starfleet 4096 Oct 7 14:00 .
----- 1 kirk starfleet 123 Oct 4 14:05 file1
```
- Yes, because `kirk` owns `file1`
 - No, because `kirk` cannot read the directory
 - Yes, because `kirk`'s group matches the group writable directory
 - No, because `kirk` has no permissions on `file1`
 - No, because the directory has no permissions for other users
53. If `/bin/bat` is a program that outputs `foo` and `/usr/bin/bat` is a program that outputs `hi` what would be the output on your screen of this two command sequence: `PATH=/usr:/usr/bin:/bin ; bat`
- `hi`
 - `foo` followed by `hi`
 - `bash: bat: command not found`
 - `hi` followed by `foo`
 - `foo`
54. Which command is used to change run levels?
- `runlevel`
 - `telinit`
 - `chkconfig`
 - `chmod`
 - `chsh`
55. When you show the type of file system inside an unmounted partition, what is displayed for a new, empty partition?
- `ext3` file system
 - `ext2` file system (the default)
 - `ntfs` file system
 - `vfat` file system
 - `data`
56. Which command line activates an existing swap partition?
- `mkswap device`
 - `swapon device`
 - `swapon -s device`
 - `mount -s device`
 - `mkfs -s device`

57. What permissions are given to **newdir** after this command line:
`umask 516 ; mkdir newdir`
- a. `r-x--xrw-` b. `-w-r-xrw-` c. `-w-rw---x`
d. `-w-rw----` e. `--xr-x---`
58. What is true about this output from `ls -il foo bar`
- ```
23 -r-x----- 2 bin bin 3 Jul 31 12:33 foo
23 -r-x----- 2 bin bin 3 Jul 31 12:33 bar
```
- a. this output is not possible  
b. **foo** and **bar** are names for the same file  
c. **foo** and **bar** are names for different files  
d. **foo** and **bar** each have three names (six names total)  
e. **foo** and **bar** are two of three names for the same file
59. If my current directory is `/etc`, which of these pathnames is equivalent to the file name `/etc/group`?
- a. `../../etc/group/.`                      b. `../etc/group`  
c. `group/.`                                      d. `./etc/group`  
e. `/root/etc/group`
60. What is true about this output from `ls -il foo bar`
- ```
23 -r-x----- 2 bin bin 3 Jul 31 12:33 foo
23 -rwxrwxrwx 2 adm adm 3 Nov 1 00:01 bar
```
- a. **foo** and **bar** are names for different files
b. **foo** and **bar** are two of three names for the same file
c. this output is not possible
d. **foo** and **bar** are names for the same file
e. **foo** and **bar** each have three names (six names total)
61. Which command line makes pathnames `/usr/local/bin` and `/usr/bin` lead to the same directory?
- a. `ln -s . /usr/local` b. `touch /usr/local`
c. `mkdir /usr/local` d. `rmdir /usr/local`
e. `ln . /usr/local`
62. Which command can unmount a single mounted file system?
- a. `umount` b. `unmount` c. `swapoff`
d. `telinit` e. `chkconfig`
63. You enter this `cp a/b c/` and get `cp: a: No such file or directory` because:
- a. you forgot to specify the destination file name after `c/`
b. directory `c` does not exist
c. the command `cp` is not in your search `PATH`
d. directory `a` does not exist
e. pathname `a` exists but is a file, not a directory

64. If I mount one file system on directory `/a` and another file system on directory `/b`, how can I link the existing file `/a/foo` to the new pathname `/b/new`?
- a. `ln -s /b/new /a/foo` b. `ln /b/new /a/foo`
c. `ln -s /a/foo /b/new` d. `ln /a/foo /b/new`
e. `ln /a/new /b/foo`
65. What is true about this output from `ls -il foo bar`
- ```
15 -r-x----- 2 bin bin 3 Jul 31 12:33 foo
99 -r-x----- 2 bin bin 3 Jul 31 12:33 bar
```
- a. **foo** and **bar** each have three names (six names total)  
b. this output is not possible  
c. **foo** and **bar** are names for different files  
d. **foo** and **bar** are two of three names for the same file  
e. **foo** and **bar** are names for the same file
66. If `/bin/foo` is a program that outputs `hi` and `/usr/bin/foo` is a program that outputs `mom` what would be the output on your screen of this two command sequence: `PATH=/etc:/usr/bin:/bin ; foo`
- a. `mom`  
b. `bash: foo: command not found`  
c. `hi` followed by `mom`  
d. `hi`  
e. `mom` followed by `hi`
67. What command creates an `ext3` file system on the third partition of the first disk?
- a. `mkfs -t /dev/sda3 ext3`                      b. `mkfs -t /dev/sd1c`  
c. `mkfs ext3 /dev/sd3a`                      d. `mkfs ext3 /dev/sda3`  
e. `mkfs -t ext3 /dev/sda3`
68. What command will show the type of file system inside an unmounted *partition*?
- a. `fdisk -s partition`                      b. `mount | grep 'partition'`  
c. `fdisk -l partition`                      d. `file partition`  
e. `file -s partition`
69. If you want a user-defined alias in all your `bash` shells, what do you do?
- a. put the alias into the `/etc/group` file for next log in  
b. create the alias and then type "save" to save it to all shells  
c. put the alias into the `grub.conf` file for next log in  
d. define the alias in my file `$HOME/.bashrc`  
e. put the alias into the `/etc/passwd` file for next log in
70. What command will change permissions on a directory to make the names in it readable by group members, but prevent group access to anything in the directory. Do not change any other permissions.
- a. `chmod g=r dir`                      b. `chmod 040 dir`                      c. `umask 030 dir`  
d. `chown g=r dir`                      e. `umask 040 dir`

71. A "swap" partition is used:
- to keep large user home directories
  - to keep a back-up copy of user home directories
  - to run programs larger than the available memory
  - to allow swapping a new disk for one with bad sectors
  - to store extra files when the ROOT disk gets full
72. Which GRUB command line displays the contents of the file **foo**?
- `cat (hd0,0)/foo`
  - `p (hd0,0)/foo`
  - `ls (hd0,0)/foo`
  - `type (hd0,0)/foo`
  - `mount (hd0,0)/foo`
73. Which of these is the Unix/Linux device name of your third disk?
- `sda3`
  - `sd3`
  - `hd0,3`
  - `hd2`
  - `sd3`
74. What command finds files by name quickly using a database?
- `grep`
  - `locate`
  - `wget`
  - `ls`
  - `find`
75. When you log in, you have the permissions of:
- one numeric user UID and one group GID
  - one numeric user UID and multiple group GIDs
  - multiple numeric user UIDs and multiple group GIDs
  - one numeric user UID and no group GIDs
  - multiple numeric user UIDs and one group GID
76. The correct syntax to assign to a shell variable is:
- `x = hello there`
  - `x = "hello there"`
  - `"x=hello there"`
  - `x="hello there"`
  - `x=hello there`
77. If file **foo** occupies one disk block, how many disk blocks are in use after this sequence of commands:
- ```
cp foo bar ; ln bar one ; cp one two ; ln one xxx
```
- 2
 - 3
 - 4
 - 5
 - 1
78. Given the following, can user **kirk** in group **starfleet** copy **./file1** to **file2**?
- ```
drwx-wx--x 2 root starfleet 4096 Oct 7 14:00 .
--wxrwxrwx 1 kirk starfleet 123 Oct 4 14:05 file1
```
- Yes, because **kirk** has write permissions on **file1**
  - No, because **file1** has no read permissions for **kirk**
  - Yes, because **kirk** owns **file1**
  - No, because the directory has no write permissions for **kirk**
  - No, because the directory is not readable by **kirk**

79. Given the following, can user **kirk** in group **starfleet** modify **./file1**?
- ```
dr-xr-xr-x 2 root starfleet 4096 Oct 7 14:00 .
-rw-r-xr-x 1 kirk starfleet 123 Oct 4 14:05 file1
```
- No, because execute permissions are not set for **kirk** on **file1**
 - No, because the directory is not accessible to **kirk**
 - No, because **kirk** has no write permission on the directory
 - Yes, because **kirk** has write permissions on **file1**
 - Yes, because **kirk** owns **file1**
80. What is the link count of file **f** after this set of successful commands?
- ```
rm f ; touch f ; cp f x
ln f a ; ln x y ; ln a z ; ln x b
```
- 3
  - 6
  - 2
  - 4
  - 5
81. What is a Unix/Linux "tarball"?
- a single compressed file containing one uncompressed file
  - a single-file that contains individual uncompressed files
  - a multi-file directory containing individual uncompressed files
  - a single-file that contains individual compressed files
  - a multi-file directory containing individual compressed files
82. What command will show the amount of free disk space in a partition?
- `find`
  - `mount`
  - `df`
  - `fdisk`
  - `ls`
83. The **minimum** permissions you need to remove a file from a directory are:
- x** permissions on the directory and **w** permissions on the file
  - w** permissions on the directory, no permissions on the file
  - w** permissions on the directory and **w** permissions on the file
  - wx** permissions on the directory and **w** permissions on the file
  - wx** permissions on the directory, no permissions on the file
84. What is the output on your screen of this two command sequence:
- ```
PATH=/bin/ls:/bin/cat:/bin/sh ; cat nosuchfile
```
- `bash: cat: command not found`
 - `cat: nosuchfile: No such file or directory`
 - `ls: /bin/cat: command not found`
 - `bash: /bin/ls: command not found`
 - `bash: /bin/sh: No such file or directory`
85. If you are in **/etc** and `ls -l` shows a symbolic link **bar** -> **/foo** then dereference the absolute path of **bar** with no symbolic links:
- `/etc/foo`
 - `/etc/bar/foo`
 - `/etc/foo/bar`
 - `/bar/foo`
 - `/foo`

86. What does password **:x:** mean in `/etc/passwd`?
- the password is locked
 - the unencrypted password is stored in the group file
 - the encrypted password is **"x"**
 - the account is locked
 - the encrypted password is stored in the shadow file
87. If `/bin/xxx` is a program that outputs **one** and `/usr/bin/xxx` is a program that outputs **two**, what would be the output on your screen of this two command sequence: `PATH=/bin/xxx:/usr/bin/xxx:/etc/passwd ; xxx`
- one**
 - two**
 - two** followed by **one**
 - one** followed by **two**
 - bash: xxx: command not found**
88. 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 >out 2>&1`
 - `date 1>out 2>out`
89. Which command line below does not show any lines from inside the file `bat`?
- `tail bat`
 - `more bat`
 - `head bat`
 - `less bat`
 - `ls bat`
90. GRUB boot menu entries are a paragraph of several lines. The keyword on the first line of the paragraph is always:
- `boot`
 - `kernel`
 - `timeout`
 - `initrd`
 - `title`
91. To "throw away" (hide) standard error output of a command, use:
- `date 1>/dev/sda1`
 - `date 2>/dev/sda1`
 - `date 2>&1`
 - `date 2>/dev/null`
 - `date 1>&2`
92. When the shell exits, what happens to background jobs of the shell?
- they keep running
 - they are made into foreground jobs
 - they are sent a termination signal
 - they exit
 - they are stopped
93. What high-level command fetches and tracks packages for Fedora or Red Hat?
- `apt-get`
 - `tar`
 - `wget`
 - `yum`
 - `rpm`

94. What is the purpose of a "swap" partition?
- to allow swapping a new disk for one with bad sectors
 - to keep user home directories
 - to store extra files when the ROOT disk gets full
 - to keep a back-up copy of user home directories
 - to run programs larger than the available memory
95. Which command line below allows programs in the current directory to execute without preceding the names with `./`?
- `$PATH=/usr/bin:./bin`
 - `PATH=/usr/bin:./bin`
 - `PATH=/usr/bin/:$HOME`
 - `PATH=./$HOME:/usr/bin`
 - `$PATH=.:$HOME:/usr/bin`
96. Which command below removes *only* this four-character file name containing a special character (and no others): `*foo`
- `rm ?foo`
 - `rm *foo`
 - `rm ./*foo`
 - `rm ./*foo`
 - `rm /*foo`
97. Give the GRUB device name for the third partition of the fourth disk:
- `(sdd,3)`
 - `(hd2,3)`
 - `(hd4,3)`
 - `(hd3,2)`
 - `(sd2,3)`
98. What command creates an `ext3` file system on *device* ?
- `file -t ext3 device`
 - `mkfs -t ext3 device`
 - `mount -t ext3 device`
 - `swapon -t ext3 device`
 - `fdisk -t ext3 device`
99. Given the following, can user `ian` in group `iangrp` append to `foobar`?
- ```
drwxrw-rwx 2 root iangrp 4096 Apr 23 11:30 .
-rw-rw-r-- 1 ian iangrp 1024 Apr 23 11:30 foobar
```
- No, because the directory is not accessible to `ian`
  - Yes, because `ian` owns `foobar`
  - Unable to determine based on the information presented
  - No, because execute permissions are not set for `ian` on `foobar`
  - Yes, because `ian` has write permissions on `foobar`
100. The **minimum** permissions you need to rename a file in a directory are:
- `w` permissions on the directory, no permissions on the file
  - `wx` permissions on the directory, no permissions on the file
  - `w` permissions on the directory and `w` permissions on the file
  - `x` permissions on the directory and `w` permissions on the file
  - `wx` permissions on the directory and `w` permissions on the file

101. Given the following, can user **kirk** in group **starfleet** remove **./file1**?
- ```
d----wx--- 2 root starfleet 4096 Oct 7 14:00 .
----- 1 kirk starfleet 123 Oct 4 14:05 file1
```
- No, because the directory has no permissions for other users
 - No, because **kirk** has no permissions on **file1**
 - Yes, because **kirk** owns **file1**
 - No, because the directory is not accessible to **kirk**
 - Yes, because **kirk**'s group matches the group writable directory
102. What is usually contained in the environment variable **\$PATH**?
- the absolute path of your login home directory
 - a colon-separated list of your **passwd** file fields
 - a colon-separated list of directories containing command names
 - the absolute path of the system **/path** directory
 - the absolute path of your login shell
103. On a disk with seven partitions, give the correct partition names after you delete partition **sda5**:
- sda1 sda2 sda3 sda4 sda5 sda6**
 - sda1 sda2 sda3 sda4 sda5**
 - sda1 sda2 sda3 sda4 sda6**
 - sda1 sda2 sda3 sda4 sda6 sda7**
 - sda1 sda2 sda3 sda4 sda5 sda7**
104. If file **a** contains 3 lines, then how many lines are output on your screen by this command line: **cat a | echo hi**
- 3 followed by 1
 - 1 followed by 3
 - 4
 - 1
 - 3
105. What command shows all the lines in file **foo** that contain the string **bar**?
- foo | grep bar**
 - cat foo > grep bar**
 - grep bar <foo**
 - grep foo bar**
 - cat foo | wc bar**
106. If my current directory is **/bin**, which of these pathnames is equivalent to the file name **/bin/ls**?
- ls/.**
 - ../../bin/ls**
 - /root/bin/ls**
 - ./bin/ls**
 - ../bin/ls/.**
107. If file **a** contains 3 lines, and file **b** contains 2 lines, then how many lines are output on your screen by this command line: **cat b | cat a**
- 2
 - 3 followed by 2
 - 5
 - 3
 - 2 followed by 3
108. Which command line does a full log-in as the root user?
- su --login**
 - login --root**
 - su login=root**
 - root --login**
 - login -root**

109. How do you execute the program **foo** in the current directory?
- /foo**
 - ./foo**
 - \$HOME/foo**
 - foo/.**
 - foo/**
110. A Unix/Linux "tarball" is:
- a single compressed file containing one uncompressed file
 - a single-file that contains individual uncompressed files
 - a multi-file directory containing individual compressed files
 - a multi-file directory containing individual uncompressed files
 - a single-file that contains individual compressed files
111. Which is the best choice for an extended partition size that will hold exactly two 100MB logical partitions?
- 130MB
 - 190MB
 - 330MB
 - 200MB
 - 230MB
112. What would you type to change the permissions on a file to **r-x-wxrw-?**
- chmod 653 file**
 - chmod 365 file**
 - chmod 241 file**
 - chmod 120 file**
 - chmod 536 file**
113. If file **a** contains 3 lines, and file **b** contains 2 lines, then how many lines are output on your screen by this command line: **rm a b | cat**
- 3 followed by 2
 - no output on screen
 - 2 followed by 3
 - 5
 - 3
114. What command powers down the machine safely?
- fdisk**
 - chkconfig**
 - passwd**
 - gpasswd**
 - shutdown**
115. What do you notice in the user/owner field if you use **ls -l** on a file owned by a deleted user?
- the field is the name **"removed"**
 - the field is an account name in parentheses, e.g. **(luke)**
 - the field is a number instead of an account name
 - the field is the name **"deleted"**
 - the field is the number zero
116. If **/bin/foo** is a program that outputs **one** and **/usr/bin/foo** is a program that outputs **two**, what would be the output on your screen of this two command sequence: **PATH=/bin/ls:/home:/usr/bin/cat:/etc ; foo**
- one**
 - two** followed by **one**
 - bash: foo: command not found**
 - two**
 - one** followed by **two**

117. Name three types of partitions:
- basic, extended, logical
 - primary, extended, linear
 - primary, extended, logical
 - primary, enhanced, logical
 - primary, enhanced, linear
118. What command shows all partition names and System IDs (types) on the sixth disk:
- `find -l /dev/sd6`
 - `df -l /dev/sd6`
 - `find -l /dev/sdf`
 - `mount -l /dev/sd6`
 - `fdisk -l /dev/sdf`
119. Which system directory contains all the run level scripts?
- `/etc/init.d`
 - `/etc/group`
 - `/boot/grub.config`
 - `/var/log`
 - `/etc/passwd`
120. Which of these is a likely kernel version number?
- Linux
 - 83 Linux
 - 2.6.31.5-127.fc12.i686.PAE
 - 139285
 - #1 SMP Sat Nov 7 21:25:57 EST 2009
121. 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/./.`
122. What permissions are given to `newfile` after this command line:
`umask 632 ; touch newfile`
- `----wxr--`
 - `--xr--r-x`
 - `---r--r--`
 - `r-x-wx-w-`
 - `rw--wx-w-`
123. What GRUB command will display the partitions on the third disk?
- `geometry (hd2)`
 - `cat (hd3)`
 - `ls (hd3)`
 - `fdisk (hd2)`
 - `mount (hd3)`
124. In an empty directory, what is the output on your screen after this command line:
`echo hi >.out ; ls *`
- no output on screen
 - `.out`
 - `*`
 - `. .. .out`
 - an error message from `ls` saying `*` does not exist

125. What is usually contained in the environment variable `$USER`?
- your login account name
 - your default user permissions for directories
 - your default user permissions for files
 - a copy of your user mask (umask)
 - your first and last user name, separated by a space
126. If the file `foo` contained the word `mom`, what would be the output on your screen of this two command sequence:
`PATH=/etc/passwd:/bin/ls:/bin/cat ; /bin/ls foo`
- `mom`
 - `/bin/ls: foo: No such file or directory`
 - `foo`
 - `bash: /bin/ls: command not found`
 - no output on screen
127. In an empty directory, how many words are in file `b` after this:
`echo 1 2 3 >a ; ls >b`
- 2
 - 5
 - 1
 - 3
 - 4
128. Which command line always prints just the two characters `$x` on the screen?
- `echo "$x"`
 - `echo $x`
 - `echo '$x'`
 - `echo $$x`
 - `echo "$$x"`
129. What command line would create a file system on the second *logical* partition?
- `fdisk /dev/sda6`
 - `fdisk /dev/sda2`
 - `mkfs /dev/sda6`
 - `mkfs /dev/sda2`
 - `mount /dev/sda2`
130. Which one of these names is usually a shell environment variable?
- `foobar`
 - `FOOBAR`
 - `FooBar`
 - `fooBar`
 - `FooBar`
131. Given the following, can user `kirk` in group `starfleet` copy `./file1` to `file2`?
`drwxr-xrwx 2 root starfleet 4096 Oct 7 14:00 .`
`-r-xr-xr-x 1 kirk starfleet 123 Oct 4 14:05 file1`
- Yes, because `kirk` owns `file1`
 - No, because the directory has no write permissions for `kirk`
 - Yes, because `kirk` has read permissions on `file1`
 - No, because `file1` has no write permissions for `kirk`
 - No, because the directory is not accessible to `kirk`
132. Pick the correct order of operations:
- `mount, fdisk, mkfs`
 - `mount, mkfs, fdisk`
 - `fdisk, mkfs, mount`
 - `mkfs, fdisk, mount`
 - `fdisk, mount, mkfs`

133. Pick the correct order of operations:
- `swapon, mkswap, fdisk`
 - `fdisk, mkswap, swapon`
 - `fdisk, swapon, mkswap`
 - `mkswap, fdisk, swapon`
 - `swapon, fdisk, mkswap`
134. What command sends signals to processes using their process numbers?
- `chkconfig`
 - `telinit`
 - `init`
 - `signal`
 - `kill`
135. What command can you use to delete a directory that isn't empty?
- `rmdir -r dir`
 - `mv -r dir`
 - `rm -r dir`
 - `del -r dir`
 - `deldir -r dir`
136. File **a** contains 2 lines. File **b** contains 3 lines. How many lines are in file **e** after this command line:
- ```
ln a d ; cp a f ; ln d c ; ln c e ; cat a b d f > e
```
- 9
  - 6
  - 2
  - 5
  - 3
137. When the shell exits, what happens to paused ("Stopped") jobs of the shell?
- they are made into foreground jobs
  - they keep running
  - they exit
  - they are sent a termination signal
  - they are stopped
138. What is in file **foo** after this command line:
- ```
echo hi >a ; ln a b ; echo me >b ; ln a foo ; rm a b
```
- no such file (nonexistent)
 - nothing (empty file)
 - me**
 - hi**
 - hi** followed by **me**
139. What command modifies existing account information (and possibly home directory)?
- `newuser`
 - `passwd`
 - `usermod`
 - `makeuser`
 - `adduser`
140. If you are in `/etc` and `ls -l` shows a symbolic link **bar** `-> ../you/foo` then dereference the absolute path of **bar** with no symbolic links:
- `/etc/you/foo`
 - `/etc/bar/you/foo`
 - `/you/foo`
 - `/bar/you/foo`
 - `/etc/you/foo/bar`

141. Given the following, can user **kirk** in group **starfleet** copy `./file1` to `file2`?
- ```
drwxrw-r-x 2 root starfleet 4096 Oct 7 14:00 .
-rwx-wx-wx 1 kirk starfleet 123 Oct 4 14:05 file1
```
- Yes, because **kirk** owns **file1**
  - No, because **file1** has no read permissions for **kirk**
  - Yes, because **kirk** has write permissions on **file1**
  - No, because the directory has no write permissions for others
  - No, because the directory is not accessible to **kirk**
142. Which of these commands makes a file owned by me, also executable by me?
- `umask 111 myfile`
  - `chmod u+x ./myfile`
  - `chmod x+u myfile`
  - `umask 777 myfile`
  - `chmod x=u ./myfile`
143. If your `PATH` contained only the file names `/bin/sh`, `/bin/cat`, and `/bin/ls`, then what would be the output on your screen of this command:
- ```
cat /etc/passwd
```
- `bash: /bin/sh: command not found`
 - `cat: /etc/passwd: command not found`
 - `cat: bash: no such file or directory`
 - `bash: cat: command not found`
 - `bash: /bin/cat: no such file or directory`
144. If you delete an account with `userdel`, does it delete the user's home directory?
- no, unless the home directory is under `/home`
 - yes, only if the home directory is under `/home`
 - yes, if you use a special option
 - not enough information to answer
 - `userdel` cannot delete home directories
145. In an empty directory, how many words are in file **c** after this:
- ```
touch a ; echo 1 2 3 >b ; ls >c
```
- 3
  - 1
  - 4
  - 5
  - 2
146. The `/etc/fstab` file contains a list of:
- currently mounted file systems
  - file system tables used to identify partition types
  - file systems to mount when booting the system
  - file system tables used by the `usermod` command
  - file system tables used by the `adduser` command

147. 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`
  - the command fails because the path `../me/old` does not exist
  - there is a second copy of the file `new` in the file named `old`
  - the command fails because the path `./dir/../new` does not exist
  - the parent directory of `dir` now has a file named `old` in it
148. What option keyword do you add in GRUB to boot a machine single-user?
- `initrd`
  - `single`
  - `kernel`
  - `rhgb`
  - `boot`
149. Which is the best choice for an extended partition size that will hold exactly three 100MB logical partitions?
- 320MB
  - 290MB
  - 100MB
  - 300MB
  - 400MB
150. If you are in `/etc` and `ls -l` shows a symbolic link `bar` `-> ../foo` then dereference the absolute path of `bar` with no symbolic links:
- `/etc/bar/foo`
  - `/etc/foo/bar`
  - `/foo`
  - `/etc/foo`
  - `/bar/foo`
151. If I mount `sda1` on `/one` and `sda2` on `/two`, how can I link the existing file `/one/foo` to the new pathname `/two/bar`?
- `ln -s /one/foo /two/bar`
  - `ln /one/bar /two/foo`
  - `ln /one/foo /two/bar`
  - `ln -s /two/bar /one/foo`
  - `ln /two/bar /one/foo`
152. To change to the parent directory, do this:
- `cd .`
  - `cd ..`
  - `cd`
  - `pwd ..`
  - `pwd`
153. What is in file `out` after this command line: `echo 1 2 >out 3 4`
- `1 2 3 4`
  - `3 4`
  - `1 2`
  - nothing (empty file)
  - `echo 1 2`
154. Given the following, can user `kirk` in group `starfleet` modify `./file1`?
- ```
dr-xr-xr-x 2 root starfleet 4096 Oct 7 14:00 .
-r-xrwxrwx 1 kirk starfleet 123 Oct 4 14:05 file1
```
- No, because `kirk` has no write permission on the directory
 - No, because `kirk` has no write permissions on `file1`
 - No, because execute permissions are not set for `kirk` on `file1`
 - No, because the directory is not accessible to `kirk`
 - Yes, because `kirk` owns `file1`

155. 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 contains only a file named `bar`
 - the directory `mt/..` now has a file named `bar` in it
 - the command fails because path `./mt/../foo` does not exist
 - there is a second copy of the file `foo` in the file named `bar`
 - the command fails because path `../me/bar` does not exist
156. Rewrite `/var/./a/./././var/b/./././etc/./bar/./foo` as a simplified absolute path:
- `/var/foo`
 - `/var/a/foo`
 - `/etc/bar/foo`
 - `/var/b/foo`
 - `/etc/foo`
157. On a disk with eight partitions, give the correct partition names after you delete partition `sda2`:
- `sda1 sda2 sda3 sda4 sda6 sda7 sda8`
 - `sda1 sda3 sda4 sda5 sda6 sda7 sda8`
 - `sda1 sda2 sda3 sda4 sda5 sda7 sda8`
 - `sda1 sda2 sda3 sda4 sda5 sda6`
 - `sda1 sda2 sda3 sda4 sda5 sda6 sda7`
158. If `/bin/foo` is a program that outputs `one` and `/usr/bin/foo` is a program that outputs `two`, what would be the output on your screen of this two command sequence: `PATH=/dev:/usr/bin:/usr:/bin:/etc ; /bin/foo`
- `bash: /bin/foo: command not found`
 - `two`
 - `two` followed by `one`
 - `one` followed by `two`
 - `one`
159. What command can you use to delete an empty directory?
- `rmdir`
 - `mvdir`
 - `deldir`
 - `delete`
 - `erase`
160. What command line modifies and moves (in one command line) the home directory `foo` to `bar` for the existing user `bob`?
- `usermod -dm /home/bar bob`
 - `usermod -m -d /home/foo /home/bar`
 - `usermod -d -m /home/bar bob`
 - `usermod -m -d /home/bar bob`
 - `usermod -d -m /home/bob bar`

161. If the file **pig** contained the word **foo**, what would be the output on your screen of this two command sequence:
`PATH=/etc/passwd:/bin/ls:/bin/cat ; /bin/ls pig`
- pig**
 - foo**
 - `/bin/ls: pig: No such file or directory`
 - `bash: /bin/ls: command not found`
 - no output on screen
162. If `/bin/foo` is a program that outputs **dad** and `/usr/bin/foo` is a program that outputs **mom** what would be the output on your screen of this two command sequence: `PATH=/usr:/etc:/bin:/usr/bin ; foo`
- mom** followed by **dad**
 - dad**
 - mom**
 - dad** followed by **mom**
 - `bash: foo: command not found`
163. What is the link count of directory **d** after this set of successful commands?
`mkdir d ; cd d ; touch a ; mkdir b c`
- 5
 - 6
 - 3
 - 2
 - 4
164. If **sub** is a directory that contains only the file **foo**, what happens after this command: `mv sub/foo sub/././bar`
- there is a second copy of the file **foo** in the file named **bar**
 - the command fails because the name **bar** does not exist
 - the directory **sub** now contains only a file named **bar**
 - the directory **sub** is now empty
 - the command fails because the name `sub/././bar` does not exist
165. If I have a directory named **a/b**, which action would increase its *link count* by exactly one?
- create a file named **a/b/c**
 - create a directory named **a/b2**
 - create a directory named **a/b/c**
 - create a file named **a/b2**
 - create a hard link to directory **b** named **b2**
166. Which command line initializes a swap partition for future use?
- `swapon -s device`
 - `mkfs -s device`
 - `fdisk -s device`
 - `mkswap device`
 - `swapon device`
167. When a user named **foo** runs a command in an executable file owned by **bar**, in a directory owned by **root**, the file executes with the permissions of:
- root and foo**
 - bar**
 - root and bar**
 - foo**
 - root**

168. The shadow password file is used:
- to hide encrypted passwords from viewing by ordinary users
 - to store secondary passwords for times when you forget your main one
 - to allow passwords to exist on partitions other than the **ROOT**
 - to keep a back-up of the main password file in case of corruption
 - to reduce the size of the main password file for faster access
169. If `/bin/xxx` is a program that outputs **one** and `/usr/bin/xxx` is a program that outputs **two**, what would be the output on your screen of this two command sequence: `PATH=/etc:/usr/bin:/usr:/bin ; /bin/xxx`
- one**
 - one** followed by **two**
 - two** followed by **one**
 - `bash: /bin/xxx: command not found`
 - two**
170. What command creates a new user account?
- `makeuser`
 - `useradd`
 - `passwd`
 - `gpasswd`
 - `groupmod`
171. How many arguments are passed to the command by the shell on this command line: `<foo foo " a 'b c' d " e ' f " g " ' >foo`
- 5
 - 2
 - 4
 - 3
 - 6
172. What are **upstart** and **systemd**?
- replacements for the legacy run levels
 - time synchronization daemons
 - programs to handle system log messages
 - uptime measurement and statistical programs
 - programs to handle UPS back-up power systems
173. What command line shows you all the partition names on *disk*?
- `df disk`
 - `du disk`
 - `find / disk`
 - `fdisk -l disk`
 - `file -s disk`
174. The *difference* between the system (**root**) crontab and all the user (personal) crontabs is:
- the personal crontab also has the `userid` in it
 - the system crontab has the date and time in it
 - the personal crontab has the date and time in it
 - the personal crontab only runs commands once
 - the system crontab also has the `userid` in it
175. If your terminal type is **xterm**, what is the output of this command line?
`echo '$TERM'`
- xterm**
 - no output on screen
 - \$TERM**
 - '\$TERM'**
 - 'xterm'**

176. 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 | uniq | tail -3 | head -1`
 a. 7 7 b. 7 c. 1 d. 3 e. 8
177. Which of these is a Linux/Unix DOS-style **primary** partition name?
 a. **sda6** b. **sda7** c. **sdb5** d. **sdb4** e. **sda5**
178. What is the purpose of the shadow password file?
 a. to keep a back-up of the main password file in case of corruption
 b. to allow passwords to exist on partitions other than the ROOT
 c. to hide encrypted passwords from viewing by ordinary users
 d. to reduce the size of the main password file for faster access
 e. to store secondary passwords for times when you forget your main one
179. Under what directory are system log files usually stored?
 a. **/etc/log/** b. **/grub/boot/** c. **/log/var/**
 d. **/var/log/** e. **/boot/grub**
180. What command will recursively show disk usage in directories?
 a. **fdisk** b. **df** c. **ls**
 d. **find** e. **du**
181. Which **crontab** line executes at **15:34** every day?
 a. *** * * 34 15 command** b. **15 * * * 34 command**
 c. **34 15 * * * command** d. **15 34 * * * command**
 e. *** * * 15 34 command**
182. If **/bin/prg** is a program that outputs **hi** and **/usr/bin/prg** is a program that outputs **foo** what would be the output on your screen of this two command sequence: `PATH=/etc:/usr/bin:/bin ; prg`
 a. **foo**
 b. **hi** followed by **foo**
 c. **hi**
 d. **bash: prg: command not found**
 e. **foo** followed by **hi**
183. Who can change the permissions of the following directory?
`dr-xrwxrwx 17 foo bar 4096 Apr 15 16:40 .`
 a. user **foo** and any user in group **bar**
 b. anyone except user **foo**
 c. only users in group **bar**
 d. only user **foo**
 e. any users
184. If you type the command **cat**, which **CTRL** key will send an **EOF** and take you back to the command prompt?
 a. **^R** b. **^C** c. **^E** d. **^U** e. **^D**

185. If the file **bat** contained the word **foo**, what would be the output on your screen of this two command sequence:
`PATH=/bin/cat:/bin/who:/bin/ls ; cat bat`
 a. **cat: bat: No such file or directory**
 b. **foo**
 c. no output on screen
 d. **bat**
 e. **bash: cat: command not found**
186. What is the final link count of file **a** after this:
`ln a d ; cp a f ; ln d c ; ln f g ; ln c e`
 a. 1 b. 2 c. 5 d. 3 e. 4
187. What is the output on your screen of this two command sequence:
`PATH=/bin/cat:/bin/sh:/bin/ls ; ls nosuchfile`
 a. **bash: /bin/ls: command not found**
 b. **ls: /bin/ls: command not found**
 c. **bash: /bin/sh: No such file or directory**
 d. **bash: ls: command not found**
 e. **ls: nosuchfile: No such file or directory**
188. What command shows the kernel "ring buffer" of system messages?
 a. **crontab** b. **ringout** c. **pstree**
 d. **dmesg** e. **syslog**
189. File **a** contains 2 lines. File **b** contains 3 lines. How many lines are in file **d** (not in **c**) after this command line:
`ln a d ; ln d c ; ln c e ; cat a a b b c c d d e e >c`
 a. 10 b. 6 c. 2 d. 21 e. 18
190. Given the following, can user **kirk** in group **starfleet** remove **./file1**?
`drwxr-xrwx 2 root starfleet 4096 Oct 7 14:00 .`
`rwrxrwxrwx- 1 kirk starfleet 123 Oct 4 14:05 file1`
 a. No, because the directory is not accessible to **kirk**
 b. No, because **kirk** has no write permission on the directory
 c. Yes, because **kirk** has full permissions on **file1**
 d. Yes, because **kirk** owns **file1**
 e. Yes, because **kirk** matches the writable other permissions
191. What command changes a user's password?
 a. **chsh** b. **passwd** c. **chpasswd**
 d. **mkpasswd** e. **password**
192. Which of these files controls where system log messages get stored?
 a. **/etc/group** b. **/boot/grub/grub.conf**
 c. **/etc/passwd** d. **/etc/syslog.conf**
 e. **/grub/grub.conf**

193. Which system directory contains the run level scripts only for run level 3?
- `/etc/init.d3`
 - `/3/init.d`
 - `/etc/rc3.d`
 - `/3/rc.d`
 - `/3/grub.d`
194. Which of the command lines below can generate a non-empty file?
- `ls foo >foo`
 - `grep 'foo' foo >foo`
 - `tail foo >foo`
 - `cat foo >foo`
 - `sort foo >foo`
195. If your `PATH` variable contains `/bin:/usr/bin`, what is the output of this command line: `echo '$PATH'`
- `'$PATH'`
 - `'/bin:/usr/bin'`
 - `/bin:/usr/bin`
 - `$PATH`
 - `echo: $PATH: No such file or directory`
196. Which command line shows just the count of words in the file?
- `wc file | awk '{print $2}'`
 - `wc file | awk '{print #2}'`
 - `wc file | awk '[print $2]'`
 - `wc file | awk '[print #2]'`
 - `wc file | awk '{print 2}'`
197. Which command mounts the second partition of the third disk on directory `foo`?
- `mount /dev/sdc2 /mnt/foo`
 - `mount /mnt/sdc2 /dev/foo`
 - `mount /mnt/foo /dev/sdc2`
 - `mount -t ntfs /mnt/sdc2 /dev/foo`
 - `mount -t vfat /mnt/foo /dev/sdc2`
198. What command fetches (downloads) a file given an http URL?
- `ifetch`
 - `download`
 - `fetch`
 - `find`
 - `wget`
199. Which of the following `PATH` statements makes the most sense?
- `PATH=/bin/bash:/usr/bin:/bin`
 - `PATH=/bin:/usr/bin:/etc/shadow`
 - `PATH=/bin:/usr/bin`
 - `PATH=/bin:/etc/group:/usr/bin`
 - `PATH=/bin/ls:/etc/passwd:/usr/bin`
200. What command line shows all processes by all users?
- `psall`
 - `jobs -l`
 - `jobs`
 - `ps laxww`
 - `showall`

201. If you use `ls -l` on a file owned by a deleted user, the user/owner field is:
- the number zero
 - the name `"deleted"`
 - a number instead of an account name
 - the name `"removed"`
 - an account name in parentheses, e.g. `(luke)`
202. Other than root, who can change the permissions of the following directory?
- ```
dr-xrwxrwx 17 ian iangrp 4096 Apr 15 16:40 .
```
- only user `ian`
  - anyone except user `ian`
  - user `ian` and any user in group `iangrp`
  - only root can change the permissions
  - only users in group `iangrp`
203. If `xxx` is a sub-directory that contains only the file `foo`, what happens after this command: `mv ./xxx/./foo ./xxx/./bar`
- the command fails because the name `./xxx/./bar` does not exist
  - there is a second copy of the file `foo` in the file named `bar`
  - the directory `xxx` is now empty
  - the directory `xxx` now contains only a file named `bar`
  - the command fails because the name `./xxx/./foo` does not exist
204. Given this `ls -il` long listing:
- ```
123 drwxr-xr-x 456 bin bin 789 Jul 31 12:33 dir
```
- How many subdirectories lie immediately under `dir`?
- 456
 - 789
 - 123
 - 787
 - 454
205. Given the following, can user `kirk` in group `starfleet` modify `./file1`?
- ```
dr-xr--r-x 2 root starfleet 4096 Oct 7 14:00 .
-rw-rw-r-- 1 kirk starfleet 123 Oct 4 14:05 file1
```
- No, because the directory is not accessible to `kirk`
  - No, because execute permissions are not set for `kirk` on `file1`
  - No, because `kirk` has no write permission on the directory
  - Yes, because `kirk` has write permissions on `file1`
  - Yes, because `kirk` owns `file1`
206. What command line shows only your own processes, not all processes?
- `crontab`
  - `ps lxww`
  - `showall`
  - `dmesg`
  - `psmine`

207. If `/bin/foo` is a program that outputs **one** and `/usr/bin/foo` is a program that outputs **two**, what would be the output on your screen of this two command sequence: `PATH=/etc:/usr/bin:/usr:/bin:/dev ; foo`
- two**
  - one**
  - one** followed by **two**
  - two** followed by **one**
  - bash: foo: command not found**
208. Which `fdisk` internal command letter displays the list of all partitions?
- l**
  - L**
  - q**
  - p**
  - f**
209. Which signal cannot be caught or ignored by a process and causes an immediate process end?
- TERM**
  - KILL**
  - STOP**
  - HUP**
  - END**
210. When a user named `foo` runs a command in a `setuid` executable file owned by `bar`, in a directory owned by `root`, the file executes with the permissions of:
- bar**
  - root and foo**
  - foo**
  - root and bar**
  - root**
211. If you type the command `sleep 60`, which `CTRL` key will **interrupt** it and take you back to the command prompt?
- ^U**
  - ^R**
  - ^I**
  - ^C**
  - ^D**
212. Which of these command line will make `foo` contain all of the content of `f1` followed by all of the content of `f2`?
- `mv f1 f2 >foo`
  - `ln f1 f2 >foo`
  - `cp f1 f2 >foo`
  - `cat f1 f2 >foo`
  - `echo f1 f2 >foo`
213. If you are in `/etc` and `ls -l` shows a symbolic link `bar -> foo` then dereference the absolute path of `bar` with no symbolic links:
- `/foo`
  - `/bar/foo`
  - `/etc/foo`
  - `/etc/bar/foo`
  - `/etc/foo/bar`
214. Which of the following is true, given this long directory listing:
- ```
drwxr-x--x 512 bin bin 712 Jul 31 12:33 dir
```
- The number 712 is the count of links (names) this directory has.
 - The number 512 is the size of this directory.
 - The number 512 is the inode number of this directory.
 - The number 512 is the count of links (names) this directory has.
 - The number 712 is the inode number of this directory.
215. Which command correctly mounts a first disk partition on directory `dir`?
- `mount -t ext2 dir /dev/sda1`
 - `mount -t ext3 /mnt/sda1 dir`
 - `mount /mnt/sda1 dir`
 - `mount /dev/sda1 dir`
 - `mount dir /dev/sda1`

216. What syntax puts a command into the "background"?
- `command #`
 - `command &`
 - `command %`
 - `command $`
 - `command @`
217. What is usually contained in the environment variable `$SHELL`?
- the relative path of the `/home/shell` directory
 - the relative path of the system `/shell` directory
 - the absolute path of your login shell
 - the absolute path of the system `/shell` directory
 - the relative path of your login shell
218. What command displays your numerical UID and GID?
- `gd`
 - `passwd`
 - `id`
 - `ugprint`
 - `uidprint`
219. If `/bin/pig` is a program that outputs **hi** and `/usr/bin/pig` is a program that outputs **foo** what would be the output on your screen of this two command sequence: `PATH=/etc:/usr/bin:/bin ; pig`
- hi**
 - hi** followed by **foo**
 - foo** followed by **hi**
 - bash: pig: command not found**
 - foo**
220. If the file `pig` contained the word `bar`, what would be the output on your screen of this two command sequence:
- ```
PATH=/etc/passwd:/bin/ls:/bin/who ; /bin/cat pig
```
- `/bin/cat: pig: No such file or directory`
  - bar**
  - no output on screen
  - pig**
  - bash: /bin/cat: command not found**
221. If you are in `/etc` and `ls -l` shows a symbolic link `bar -> dir/foo` then dereference the absolute path of `bar` with no symbolic links:
- `/etc/dir/foo`
  - `/bar/dir/foo`
  - `/etc/bar/dir/foo`
  - `/dir/foo`
  - `/etc/dir/foo/bar`
222. Pick the correct order of operations:
- `fdisk, mkswap, swapon`
  - `swapon, fdisk, mkswap`
  - `mkswap, swapon, fdisk`
  - `swapon, mkswap, fdisk`
  - `mkswap, fdisk, swapon`
223. What is the link count of directory `d` after this set of successful commands?
- ```
mkdir d ; cd d ; touch f ; ln f a ; ln f b
```
- 4
 - 5
 - 3
 - 1
 - 2