PRINT Name: _____ **LAB Section:** | | | |

Test Version: `075` **One-Answer Multiple Choice** **227 Questions − 10 of 10%**

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

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1. **Did you read all the words of the test instructions on page one?**
   a. **`Taip`** *(Yes - Lithuanian)* *b.* **`Igen`** *(Yes - Hungarian)*
   c. **`Jes`** *(Yes - Esperanto)* *d.* **`Sim`** *(Yes - Portuguese)*
   e. **`Tak`** *(Yes - Polish)*
2. **My three-digit Lab Section number is:**
   a. The Test Version number printed in the top left corner.
   b. My lecture room number, e.g. **`T117`**.
   c. My lecture section number **`400`**.
   d. The section number of my weekly 2-hour lab period.
   e. My lab room number, e.g. **`P305`**, **`T327`**, **`P213`**, or **`B330`**
3. In an empty directory, how many arguments are passed to the **`cat`** command in this command line: **`touch a1 a2 ba ca ; cat a*`**
   a. **`2`** *b.* none *c.* **`1`** *d.* **`4`** *e.* **`3`**
4. To leave a shell and let the terminal window close, type:
   a. **`quit`** *b.* **`[CTRL-C]`** *c.* **`bye`**
   d. **`exit`** *e.* **`q`**
5. In an empty directory, what is the output on your screen after this command line:
   `ls out 2>/dev/null`
   a. **`ls: out: No such file or directory`**
   b. **`out`**
   c. no output
   d. **`ls: out 2>/dev/null: No such file or directory`**
   e. **`ls: /dev/null: No such file or directory`**
6. 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`**
   a. **`2`** *b.* **`3`** *c.* **`5`**
   d. **`3`** followed by **`2`** *e.* **`2`** followed by **`3`**
7. What command can you use to delete an empty directory?
   a. **`erase`** *b.* **`mvdir`** *c.* **`rmdir`**
   d. **`deldir`** *e.* **`delete`**

8. Which command below is the best way to find a line containing a question mark (**`?`**) in the file **`/etc/passwd`**?
   a. **`grep /etc/passwd '?'`** *b.* **`search '?' /etc/passwd`**
   c. **`grep './?' /etc/passwd`** *d.* **`grep '?' /etc/passwd`**
   e. **`find '?' /etc/passwd`**
9. What is in the file **`bar`** after this command line:
   `echo hi >x ; echo ho >x ; mv x y >bar`
   a. **`hi`** *b.* nothing (empty file)
   c. **`hi`** followed by **`ho`** *d.* **`ho`**
   e. no such file (nonexistent)
10. If file **`a`** contains 2 lines, and file **`b`** contains 3 lines, then how many lines are in file **`c`** after this command line:
    `cat a a >c ; head b >>a ; cat c b >c a`
    a. **`0`** *b.* **`7`** *c.* **`10`** *d.* **`12`** *e.* **`8`**
11. How many lines are in the file **`bar`** after this command line:
    `echo hi >x ; echo ho >>x ; cat x >bar`
    a. **`6`** *b.* **`4`** *c.* **`0`** *d.* **`1`** *e.* **`2`**
12. If **`cow`** is a sub-directory that contains only the file **`dog`**, what happens after this command: **`mv cow/dog cow/./cat`**
    a. the command fails because the name **`cow/./cat`** does not exist
    b. the directory **`cow`** is now empty
    c. the directory **`cow`** now contains only a file named **`cat`**
    d. the command fails because the name **`cat`** does not exist
    e. there is a second copy of the file **`dog`** in the file named **`cat`**
13. In an empty directory, what is the output on your screen after this command line:
    `date >.foo >.bar ; ls *`
    a. no output
    b. **`.foo .bar`**
    c. an error message from **`ls`** saying **`*`** does not exist
    d. **`*`**
    e. **`. .. .foo .bar`**
14. 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. there is a second copy of the file **`foo`** in the file named **`bar`**
    b. the command fails because the path **`../me/bar`** does not exist
    c. the command fails because the path **`./mt/../foo`** does not exist
    d. the directory **`mt`** now contains only a file named **`bar`**
    e. the parent directory of **`mt`** now contains a file named **`bar`**

15. 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
    a. the command fails because the path **../me/old** does not exist
    b. there is a second copy of the file named **new** in the file named **old**
    c. the command fails because the path **./dir/../new** does not exist
    d. the parent directory of **dir** now has a file named **old** in it
    e. the directory **dir** now contains only a file named **old**
16. What is the result of this exact command line: **ls /foo bar**
    a. the contents of the files **/foo** and **bar** will be displayed
    b. file **/foo** will be copied to **bar**
    c. the two text strings **/foo** and **bar** will be displayed
    d. all the files under directory **/foo** with the name **bar** will be displayed
    e. the names of the pathnames **/foo** and **bar** will be displayed
17. If my current directory is **/lib**, which of these pathnames is equivalent to the pathname **/lib/x/y**?
    a. **/x/y** *b.* **./lib/x/y** *c.* **../x/y**
    d. **../lib/y** *e.* **../lib/x/y**
18. In the output of the command **ls -a**, a dot (period) that *begins* a name signifies what?
    a. A current file.
    b. The current directory.
    c. The parent directory.
    d. A name that is hidden.
    e. A name with an unprintable character.
19. How do I search for the string **foo** in the text display output from the **man** command?
    a. **/foo** *b.* select "**Search**" in the menu
    c. **find foo** *d.* **search foo**
    e. **@foo**
20. The purpose of the **PS1** shell variable is:
    a. to find patterns inside a text file
    b. to list your suspended jobs
    c. to set the shell prompt
    d. to protect your HOME directory from access
    e. to allow access to the ROOT directory
21. How do you search for the word **nongraphic** in the man page for **ls**?
    a. type **man ls** at the shell, then **^F** (CTRL-F), then **nongraphic**
    b. type **man -k nongraphic** at the shell
    c. type **man ls -nongraphic** at the shell
    d. type **man ls** at the shell, then **/nongraphic**
    e. type **man nongraphic | grep ls** at the shell

22. If **foo** is a sub-directory that contains only the file **bar**, what happens after this command: **cp foo/bar ./foo/../me**
    a. the directory **foo** is now empty
    b. there is a second copy of the file **bar** in the file named **me**
    c. there is a second copy of the file **bar** in directory **foo**
    d. the command fails because the name **foo/bar** does not exist
    e. the directory **foo** now contains only a file named **me**
23. In the output of **ls -a**, the two-character name **..** signifies what?
    a. The current directory.
    b. It begins every name that is hidden.
    c. The ROOT directory.
    d. A file or directory with double links.
    e. The parent directory.
24. What is the output of this command line in an empty directory:
    touch x .a .ab .cde .fghi ; echo .??*
    a. an error message from **echo** saying **.??*** does not exist
    b. **.ab .cde .fghi**
    c. **.??***
    d. **.cde .fghi**
    e. **. .. .a .ab .cde .fghi**
25. 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 command fails because path **./mt/../foo** does not exist
    b. the directory **mt** now contains only a 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. there is a second copy of the file **foo** in the file named **bar**
26. If **/etc/passwd** is a file name, which pathname always leads to the same file?
    a. **/etc/passwd/./.** *b.* **/./../etc/./passwd**
    c. **./../etc/passwd** *d.* **/etc/../../passwd**
    e. **/etc/passwd/../..**
27. Which of these pathnames is *not* an absolute pathname (after all shell expansions)?
    a. **/../foo** *b.* **/foo** *c.* **~/foo**
    d. **$HOME/foo** *e.* **foo**
28. If my current directory is **/usr**, which of these pathnames is equivalent to the pathname **/usr/x/y/z**?
    a. **../x/y/z** *b.* **x/./y/z** *c.* **./usr/x/y/z**
    d. **../usr/y/z** *e.* **/x/y/z**
29. 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. **0** *b.* **4** *c.* **2** *d.* **1** *e.* **5**

30. What is the absolute pathname of the Unix/Linux password (account) file?
    a. **/etc/passwd** *b.* **/usr/passwd** *c.* **/bin/passwd**
    d. **/lib/passwd** *e.* **/var/passwd**

31. If my current directory is **/home**, and my HOME directory is **/home/me**, which command copies the password file into my HOME directory under the name **foo**?
    a. **cp ../home/me/../etc/passwd ./me/./foo**
    b. **cp ../../etc/passwd /me/foo**
    c. **cp ../etc/passwd ../me/foo**
    d. **cp me/../../etc/passwd me/foo**
    e. **cp ./me/../etc/passwd ../home/me/foo**

32. If **foo** is a sub-directory that contains only the file **bar**, what happens after this command: **mv foo/me foo/bar**
    a. the command fails because the name **me** does not exist
    b. there is a second copy of the file **bar** in the file named **me**
    c. the command fails because **bar** is not a directory
    d. there is only the file named **me** in the directory now
    e. an empty file named **me** is created

33. If file **twenty** contains twenty lines, and file **thirty** contains thirty lines then how many lines are output on your screen by this command line:
    tail twenty | cat thirty
    a. **50** *b.* **20** *c.* **0** *d.* **40** *e.* **30**

34. If **pig** is a sub-directory that contains only the file **dog**, what happens after this command: **mv pig/dog pig/./cat**
    a. the command fails because the name **pig/./cat** does not exist
    b. the directory **pig** is now empty
    c. there is a second copy of the file **dog** in the file named **cat**
    d. the command fails because the name **cat** does not exist
    e. the directory **pig** now contains only a file named **cat**

35. What is the output on your screen of this command line:
    echo wc >wc ; wc wc >wc ; cat wc
    a. **1 1 3 wc** *b.* no output *c.* **0 0 0 wc**
    d. **1 1 2 wc** *e.* **wc**

36. 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
    a. the directory **sub** now contains only a file named **cat**
    b. the directory **sub/..** now has a file named **cat** in it
    c. the command fails because the path **../me/cat** does not exist
    d. the command fails because the path **sub/../fil** does not exist
    e. there is a second copy of the file **fil** in the file named **cat**

37. What is the output of this command line in an empty directory:
    touch .a .b .c ; echo [.]*
    a. **[.]***
    b. **. .. .a .b .c**
    c. no output
    d. **.a .b .c**
    e. an error message from **echo** saying **[.]*** does not exist

38. If **pig** is a sub-directory that contains only the file **dog**, what happens after this command: **mv pig/dog pig/./cat**
    a. the directory **pig** is now empty
    b. the directory **pig** now contains only a file named **cat**
    c. there is a second copy of the file named **dog** in the file named **cat**
    d. the command fails because the name **cat** does not exist
    e. the command fails because the name **pig/./cat** does not exist

39. If file **nine** contains 9 lines, each of which is the one-digit line number of the line in the file (**1** through **9**), what is the output on your screen of this command:
    sort nine nine | tail -3 | head -1
    a. **2 2** *b.* **8 8** *c.* **9** *d.* **1** *e.* **8**

40. 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
    a. no output *b.* **2** *c.* **1** followed by **2**
    d. **2** followed by **1** *e.* **1**

41. What is the output on your screen after this command line:
    echo hi >a ; ls a > wc
    a. **2** *b.* **3** *c.* **1 1 2**
    d. no output *e.* **1 1 3**

42. What would you see if you typed this command: **cat /foo**
    a. The contents of your subdirectory named **foo**
    b. The contents of the file **foo** located in the ROOT directory
    c. The contents of the file **foo** located in your HOME directory
    d. The contents of the file **foo** located in the parent directory
    e. The contents of your directory named **foo**

43. 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**
    a. **50** *b.* **20** *c.* **0** *d.* **30** *e.* **80**

44. In an empty directory, how many arguments are passed to the **cat** command in this command line: **touch a1 a2 ac ba .a ; cat a***
    a. **3** *b.* **1** *c.* **2** *d.* **4** *e.* none

45. What is the Unix user name for the Super-User account?
    a. **alterego** *b.* **master**
    c. **superuser** *d.* **root**
    e. **administrator**

46. If **/etc/passwd** is a file name, which pathname always leads to the same file?
    a. **/etc/../../passwd** *b.* **/etc/passwd/../..**
    c. **./etc/passwd** *d.* **/etc/passwd/.**
    e. **/../etc/./passwd**

47. In a manual page **SYNOPSIS** section, square brackets (**[]**) mean:
    a. something that is repeated *b.* no special meaning
    c. an arithmetic expression *d.* a GLOB pattern matching a list
    e. something that is optional

48. If file **ten** contains ten lines, and file **twenty** contains twenty lines, then how many lines are output on your screen by this command line:
```
cat twenty | sort ten
```
    a. **30** *b.* **20** *c.* **10** *d.* **60** *e.* **0**

49. The output of the **tree** command is:
    a. the tree of files under the ROOT directory
    b. a recursive list of users logged in to the system
    c. the tree of users logged in to the system
    d. the tree of files under your HOME directory
    e. an indented, recursive list of directories and their contents

50. Which of these statements is true?
    a. To delete a word from the shell command line, type [CTRL]-[D]
    b. To erase an entire line of typing, type [CTRL]-[D].
    c. Unix commands must be entered in lower-case letters.
    d. Unix commands can be entered in upper-case or lower-case letters; they are equivalent.
    e. To indicate End-of-File (no more input), type [CTRL]-[C].

51. If you type the command **cat**, which *CTRL* key will send an **EOF** and take you back to the command prompt?
    a. **^U** *b.* **^D** *c.* **^C** *d.* **^R** *e.* **^E**

52. Which of these characters is *not* a shell GLOB meta-character?
    a. **#** *b.* **[** *c.* **]** *d.* ***** *e.* **?**

53. Which of these statements is true?
    a. To indicate End-of-File (no more input) to a program, type **[CTRL]-[D]**.
    b. The **file** command creates a new, empty file in the current directory
    c. To erase an entire line of typing, type **[ALT]-[DELETE]**.
    d. Command **apropos** is an exact synonym for command **man**.
    e. To interrupt a Unix process from the keyboard, type **[CTRL]-[D]**.

54. In an empty directory, what is the output on your screen after this command line:
```
ls 1>/dev/null nosuchfile
```
    a. **nosuchfile**
    b. **ls: 1>/dev/null nosuchfile: No such file or directory**
    c. **ls: nosuchfile: No such file or directory**
    d. **ls: /dev/null: No such file or directory**
    e. no output

55. The command that creates a directory and all parent directories is:
    a. **mkdir -r a/b/c** *b.* **rm -r a/b/c**
    c. **touch a/b/c** *d.* **rmdir -r a/b/c**
    e. **mkdir -p a/b/c**

56. In a directory that contains only the file **foo**, what happens after this command:
```
cp foo bar
```
    a. there is only the file named **bar** in the directory now
    b. the command fails because the name **bar** does not exist
    c. an empty file named **bar** is created
    d. there is a copy of the file named **foo** in the file named **bar**
    e. the command fails because **bar** is not a directory

57. How many lines are in the file **out** after this command line:
```
echo hi >x ; echo ho >>x ; cat x x x >out
```
    a. **1** *b.* **2** *c.* **6** *d.* **0** *e.* **3**

58. How many words are in file **out** after this command line:
```
echo one >two >three >out
```
    a. **3** *b.* **2** *c.* **0** *d.* **1** *e.* **4**

59. What is the output of this command line in an empty directory:
```
touch 1 2 3 .a .ab .abc ; echo [.]*
```
    a. **[.]***
    b. an error message from **echo** saying **[.]*** does not exist
    c. **.a .ab .abc**
    d. **. .. .a .ab .abc**
    e. no output

60. What is the output of this command line in an empty directory:
```
touch a .a bc .bc def ; echo [ab]*
```
    a. **[ab]***
    b. **a bc**
    c. **a .a bc .bc**
    d. an error message from **echo** saying **[ab]*** does not exist
    e. no output

61. If file **x** contains ten lines, and file **y** contains twenty lines, then how many lines are in file **cat** after this command line:
```
sort x y >z ; tail -5 y >y ; sort x y z >cat
```
    a. **40** *b.* **60** *c.* **45** *d.* **50** *e.* **0**

62. Which command line displays all the non-hidden names in the current directory that contain the letter **a** (and no others)?
a. **echo *a*** *b.* **echo [a]** *c.* **echo ?a?**
d. **echo *a** *e.* **echo a***

63. To change your own account password, use this exact command line:
a. **$ passwd cst8207**
b. **$ passwd**
c. **$ passwd cst8207.idallen.ca**
d. **$ passwd options LOGIN**
e. **$ passwd root**

64. In an empty directory, what is the output on your screen of this command line:
echo hi >foo >bar ; cat foo
a. **hi**
b. **hi >foo**
c. **hi >foo >bar**
d. **cat: foo: No such file or directory**
e. no output

65. In an empty directory, how many words are in file **cow** after this command line:
touch dog dog cat ; ls >cow
a. **1** *b.* **2** *c.* **0** *d.* **3** *e.* **4**

66. 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***
a. none *b.* **4** *c.* **3** *d.* **2** *e.* **1**

67. 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 ./me/../etc/passwd ../home/me/foo**
c. **cp ../home/me/../etc/passwd ./me/./foo**
d. **cp ../etc/passwd ../me/foo**
e. **cp ../../etc/passwd /me/foo**

68. 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/. dir/.. dir/.on dir/.tw dir/.th dir/.f.**
b. **dir/.on dir/.tw dir/.th**
c. **dir/.f.**
d. no output
e. **dir/***

69. The output of the **find** command is:
a. finds lines in a file matching a pattern
b. finds patterns in a file corresponding to lines
c. account names matching a pattern
d. a recursive list of users logged in to the system
e. a recursive list of pathnames

70. If **/etc/shadow** is a file name, which pathname always leads to the same file?
a. **/etc/../../shadow** *b.* **/./../etc/./shadow**
c. **/etc/shadow/../..** *d.* **/etc/shadow/./.**
e. **./../etc/shadow**

71. 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/???
a. no output
b. **dir/???**
c. **dir/.a?**
d. **dir/.aa dir/.ab**
e. **dir/.aa dir/.ab dir/.a? dir/.a***

72. How many lines are in the file **out** after this command line:
date >f ; ls f >>f ; cat f f >out
a. **6** *b.* **0** *c.* **4** *d.* **2** *e.* **1**

73. What is the result of this exact command line: **echo /foo bar**
a. the two text strings **/foo** and **bar** will be displayed
b. the contents of the files **/foo** and **bar** will be displayed
c. file **/foo** will be copied to **bar**
d. all the files under directory **/foo** with the name **bar** will be displayed
e. the names of the pathnames **/foo** and **bar** will be displayed

74. 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**
a. the directory **mt** now contains only a file named **bar**
b. the command fails because the path **mt/../bar** does not exist
c. the command fails because the path **mt/../foo** does not exist
d. the directory **../me** now contains a file named **bar**
e. there is a second copy of the file **foo** in the file named **bar**

75. If **/bin/bash** is a file name, which pathname always leads to the same file?
a. **/bin/../bash** *b.* **/./bin/./bash**
c. **./bin/bash** *d.* **/bin/bin/../bash**
e. **/bin/bash/.**

76. If **/bin/bash** is a file name, which pathname always leads to the same file?
a. **./bin/bash** *b.* **/bin/bash/..**
c. **/bin/bash/.** *d.* **/bin/../bash**
e. **/../../bin/bash**

77. In an empty directory, how many words are in file **foo** after this command line:
```
date >.bar >.out ; ls >foo
```
a. **2** *b.* **0** *c.* **3** *d.* **4** *e.* **1**

78. What is the output of this command line in an empty directory:
```
touch .a .b .c ; echo .??*
```
a. **. .. .a .b .c**
b. an error message from **echo** saying **.??*** does not exist
c. no output
d. **.a .b .c**
e. **.??***

79. 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***
a. none *b.* **4** *c.* **2** *d.* **1** *e.* **3**

80. In an empty directory, what is the output on your screen after this command line:
```
touch a ; ls >wc -l
```
a. **3** *b.* **1** *c.* no output
d. **0** *e.* **2**

81. What command can you use to delete a directory that isn't empty?
a. **rm -r dir** *b.* **del -r dir**
c. **rmdir -r dir** *d.* **deltree -r dir**
e. **deldir -r dir**

82. If **foo** is a sub-directory that contains only the file **bar**, what happens after this command: **mv foo/./bar foo/././me**
a. the command fails because the name **foo/./bar** does not exist
b. there is a second copy of the file **bar** in the file named **me**
c. the directory **foo** now contains only a file named **me**
d. the directory **foo** is now empty
e. the command fails because the name **me** does not exist

83. Given the pathname **a/b/c**, the *basename* of this pathname is:
a. **a/b** *b.* **b/c** *c.* **a** *d.* **c** *e.* **b**

84. In a directory containing one file named **dog**, what is the output on your screen after this command line: **2>/dev/null ls nosuchfile**
a. **nosuchfile**
b. **bash: 2>/dev/null: command not found**
c. no output
d. **ls: nosuchfile: No such file or directory**
e. **dog**

85. 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
```
a. the directory **mt** now contains a file named **foo**
b. the command fails because the path **mt/../foo** does not exist
c. the directory **mt** is still empty
d. the command fails because the path **../me/bar** does not exist
e. the directory **me** now contains a file named **bar**

86. If my current directory is **/home**, which of these pathnames is equivalent to the pathname **/home/a/b/c**?
a. **./a/b/c** *b.* **/a/b/c** *c.* **../home/b/c**
d. **../a/b/c** *e.* **./home/a/b/c**

87. If file **foo** contains 99 lines, each of which is the two-digit line number of the line in the file (**01** through **99**), what is the output on your screen of this command:
```
sort -r foo foo | tail -4 | head -1
```
a. **96 96** *b.* **02** *c.* **98**
d. **96** *e.* **04 04**

88. 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**?
a. **cp ../home/./foo/../bin/ls foo/xx**
b. **cp ./../bin/ls ../foo/xx**
c. **cp ././foo/../bin/ls ../home/foo/xx**
d. **cp ../../bin/./ls /foo/xx**
e. **cp ./foo/../../bin/ls ./foo/./xx**

89. How many words are in the file **x** after this command line:
```
echo 1 2 >x ; echo 3 >x ; echo 4 >>x
```
a. **2** *b.* **1** *c.* **3** *d.* **0** *e.* **4**

90. In which section of the manual do you find super-user and admin commands?
a. 4 *b.* 2 *c.* 1 *d.* 8 *e.* 3

91. What does *quoting* mean on a shell command line?
a. typing a "control" character using the **[CTRL]** key
b. using a leading tilde ("**~**") on a pathname to mean your HOME directory
c. using more than one pathname argument to a command, e.g. **rm a b c**
d. setting the PS1 variable to be your shell prompt
e. turning off the special meaning of shell meta-characters

92. 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
```
a. there is a second copy of the file **fil** in the file named **cat**
b. the directory **sub/..** now has a file named **cat** in it
c. the command fails because the path **../myhome/cat** does not exist
d. the command fails because the path **sub/../fil** does not exist
e. the directory **sub** now contains only a file named **cat**

93. The shell meta-character used to separate multiple separate commands on the same line of typing is:
a. **@** *b.* **+** *c.* **,** *d.* **:** *e.* **;**

94. In an empty directory, what happens after this command line:
```
mkdir a b c ; mv a b c
```
a. the directories **a**, **b**, and **c** are moved to the directory **c**
b. an error message: **mv: target 'c' is not a directory**
c. the directories **a** and **b** are moved into the directory **c**
d. the directories **a** and **b** are appended to the directory **c**
e. the directories **a**, **b**, and **c** are moved to the current directory

95. If my current directory is **/etc**, which of these pathnames is equivalent to the file name **/etc/passwd**?
a. **/root/etc/passwd** *b.* **../etc/passwd/.**
c. **passwd/.** *d.* **./etc/passwd**
e. **./../../etc/./passwd**

96. Which Unix command line deletes a directory and everything inside it?
a. **deltree -all dir** *b.* **rmdir -r dir**
c. **rm -r dir** *d.* **rm -all dir**
e. **rmdir -all dir**

97. What do you do to erase an entire line of typing in the shell?
a. select the line with the mouse and use the **DEL** key
b. type **[CTRL-U]**
c. type **[CTRL-W]**
d. type **[CTRL-C]**
e. type **[CTRL-D]**

98. 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**
a. the directory **bar** now contains a file named **foo**
b. the directory **mt** is still empty
c. the directory **mt** now contains a file named **foo**
d. the directory **mt** now contains a directory named **bar**
e. the command fails because **bar/mt** is not a directory

99. Which pathname almost always leads to the same file named: **/etc/passwd**?
a. **../etc/passwd** *b.* **/etc/../etc/./passwd**
c. **/etc/./etc/../passwd** *d.* **./etc/passwd**
e. **/etc/passwd/.**

100. If my current directory is **/bin**, which of these pathnames is equivalent to the file name **/bin/ls**?
a. **../bin/ls/.** *b.* **ls/.** *c.* **/root/bin/ls**
d. **./bin/ls** *e.* **../../bin/ls**

101. 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. **ls: 2>/dev/null: No such file or directory**
c. no output
d. **nosuchfile**
e. **ls: nosuchfile: No such file or directory**

102. If you type the command **sleep 60**, which *CTRL* key will **interrupt** it and take you back to the command prompt?
a. **^R** *b.* **^I** *c.* **^D** *d.* **^C** *e.* **^U**

103. What happens when you try to change to the parent directory of ROOT, e.g.
```
cd / ; cd ..
```
a. the shell issues an error message and does not change
b. the shell asks you to retype this invalid directory
c. the shell issues a warning, but changes to the parent
d. you go to the parent directory containing your **C:** drive
e. the shell current directory is still ROOT; no change

104. 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***
a. **2** *b.* **1** *c.* **4** *d.* **5** *e.* **3**

105. 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
```
a. **120** *b.* **50** *c.* **80** *d.* **0** *e.* **70**

106. What is the output on your screen after this command line:
```
echo hi >ls ; cat ls > wc
```
a. **1 1 3** *b.* **hi**
c. no output on screen *d.* **ls**
e. **1 1 2**

107. In an empty directory, how many words are in file **pig** after this command line:
```
touch pig pig ; ls >pig
```
a. **0** *b.* **4** *c.* **1** *d.* **3** *e.* **2**

108. In a manual page **SYNOPSIS** section, ellipsis (three dots) (`...`) mean:
   a. something that is repeated
   b. something that is optional
   c. a hidden directory
   d. the parent directory
   e. no special meaning

109. If `/bin/bash` is a file name, which pathname always leads to the same file?
   a. `/bin/bash/.`
   b. `./../bin/bash`
   c. `/bin/../bash`
   d. `/bin/bin/../bash`
   e. `/../bin/./bash`

110. What is the output of this command line in an empty directory:
```
touch .1 .2 .3 4 5 6 ; echo .*
```
   a. `.1 .2 .3 4 5 6`
   b. an error message from `echo` saying `.*` does not exist
   c. `4 5 6`
   d. `. .. .1 .2 .3`
   e. `.*`

111. 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 a second copy of the file `bar` in the file named `moo`
   b. the command fails because the name `moo` does not exist
   c. the command fails because `bar` is not a directory
   d. there is only the file named `moo` in the directory now
   e. an empty file named `moo` is created

112. In an empty directory, what is the output on your screen after this command line:
```
touch a b .1 .2 ; echo .??*
```
   a. `. .. a b .1 .2`
   b. an error message from `echo` saying `.??*` does not exist
   c. `.??*`
   d. `. .. .1 .2`
   e. `a b`

113. The shell expands a leading tilde (`~`) in a pathname (e.g. `~/foo`) to be:
   a. the parent directory
   b. your HOME directory
   c. the ROOT directory
   d. the directory `/root`
   e. the current directory

114. How many lines are in file `out` after this command line:
```
date >wc >cat >out
```
   a. `0 0 0`
   b. `1`
   c. `1 6 29`
   d. `2`
   e. `0`

115. 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. `7` *b.* `12` *c.* `5` *d.* `0` *e.* `8`

116. Which command line displays all the non-hidden names in the current directory that contain the case-insensitive word `me` (and no others)?
   a. `echo *[me]*`
   b. `echo *(M,m,E,e)*`
   c. `echo ?[MmEe]?`
   d. `echo *[Mm][Ee]*`
   e. `echo *[MmEe]*`

117. If `/etc/passwd` is a file name, which pathname always leads to the same file?
   a. `/etc/etc/../passwd`
   b. `/etc/passwd/.`
   c. `/./etc/./passwd`
   d. `./etc/passwd`
   e. `/etc/../passwd`

118. If my current directory is `/home`, which of these pathnames is equivalent to the pathname `/home/a/b/c`?
   a. `../home/b/c`
   b. `../a/b/c`
   c. `./home/a/b/c`
   d. `/a/b/c`
   e. `../home/a/b/c`

119. What is in file `foo` after this command line: `echo 1 2 >foo 3`
   a. `1 2 3`
   b. nothing (empty file)
   c. `1 2`
   d. `echo 1 2`
   e. `3`

120. The option to `ls` that shows hidden names is:
   a. `-l` *b.* `-h` *c.* `-i` *d.* `-1` *e.* `-a`

121. Which of the following commands will leave `file1` non-empty?
   a. `tail file1 > file1`
   b. `sort file1 > file1`
   c. `cat file1 > file1`
   d. `head file1 > file1`
   e. `wc file1 > file1`

122. Which command below is the best way to find a line containing an asterisk (`*`) in the file named `foo`?
   a. `grep foo [*]`
   b. `grep ./* foo`
   c. `grep * foo`
   d. `grep '*' foo`
   e. `grep foo "*"`

123. What is the output of this command line in an empty directory:
```
touch 1 2 3 .a .b .c ; echo .??*
```
   a. `. .. 1 2 3 .a .b .c`
   b. `.??*`
   c. `. .. .a .b .c`
   d. an error message from `echo` saying `.??*` does not exist
   e. `.a .b .c`

124. In an empty directory, how many words are in file `out` after this command line:
```
touch 1 2 3 2 1 ; ls >out
```
   a. `4` *b.* `6` *c.* `5` *d.* `3` *e.* `0`

125. To make the **bash** shell complete commands or file names, you type the first part of the command or file name and then press this key:
a. **[TAB]** *b.* **[CTRL]-[D]** *c.* **[CTRL]-[C]**
d. **[ALT]-[F1]** *e.* **[ALT]**

126. If file **foo** contains 9 lines, each of which is the one-digit line number of the line in the file (**1** through **9**), what is the output on your screen of this command:
```
sort foo foo | tail -2 | head -1
```
a. **9** *b.* **2 2** *c.* **8** *d.* **8 8** *e.* **1**

127. Which of these command line will make **bar** contain all of the content of **f1** followed by all of the content of **f2**?
a. **wc f1 f2 >bar** *b.* **cp f1 f2 >bar**
c. **mv f1 f2 >bar** *d.* **echo f1 f2 >bar**
e. **cat f1 f2 >bar**

128. What is the possible output on your screen of this command line:
```
echo wc >date ; sort date >date ; cat date
```
a. **Fri Mar 16 12:00:00 EST 2012**
b. **1 6 28 date**
c. **1 6 29 date**
d. no output on screen
e. **wc**

129. If **ian** is a sub-directory that contains only the file **foo**, what happens after this command: **mv ./ian/./foo ./ian/../bar**
a. the directory **ian** is now empty
b. the directory **ian** now contains only a file named **bar**
c. there is a second copy of the file **foo** in the file named **bar**
d. the command fails because the name **./ian/./foo** does not exist
e. the command fails because the name **./ian/../bar** does not exist

130. If file **/a** contains 7 lines, and file **/b** contains 5 lines, then how many lines are in file **/c** after this command line:
```
cat /a /b >/c ; sort /c >/c ; sort /c /a /b >/c
```
a. **0** *b.* **24** *c.* **12** *d.* **7** *e.* **5**

131. What is the output on your screen of this command line:
```
echo pig >one ; echo cow | head -2 one
```
a. an error message *b.* **cow** followed by **pig**
c. **pig** *d.* **pig** followed by **cow**
e. **cow**

132. Which command line shows the file in **/bin** with the largest checksum?
a. **ls /bin/* | sum | sort -nr | head -1**
b. **cat /bin/* | sum | sort -nr | head -1**
c. **sum /bin | sort -nr | head -1**
d. **sum /bin/* | sort -nr | head -1**
e. **cat /bin | sum | sort -nr | head -1**

133. Which command line lists all possible utilities available for compiling programs?
a. **man compile** *b.* **locate compile**
c. **apropos compile** *d.* **find compile**
e. **grep compile /etc/**

134. Which command line below does *not* show any lines from inside the file **out**?
a. **more out** *b.* **head out** *c.* **tail out**
d. **wc out** *e.* **sort out**

135. If my current directory is **/etc**, which of these pathnames is equivalent to the file name **/etc/passwd**?
a. **./etc/passwd** *b.* **../passwd**
c. **../etc/passwd/.** *d.* **/passwd**
e. **./passwd**

136. What is the output on your screen after this command line:
```
mkdir dir ; touch dir/.aa dir/.bb ; echo dir/*
```
a. **dir/. dir/.. dir/.aa dir/.bb**
b. **dir/.aa dir/.bb**
c. **dir/***
d. no output
e. **dir/**

137. 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***
a. **3** *b.* **1** *c.* **2** *d.* none *e.* **4**

138. Which of the command lines below can generate a non-empty file?
a. **sort foo >foo** *b.* **cat foo >foo**
c. **ls foo >foo** *d.* **grep 'foo' foo >foo**
e. **tail foo >foo**

139. If my current directory is **/etc**, which of these pathnames is equivalent to the file name **/etc/passwd**?
a. **passwd** *b.* **../passwd**
c. **../etc/passwd/.** *d.* **./etc/passwd**
e. **/passwd**

140. In an empty directory, how many words are in file **out** after this command line:
```
echo hi >a ; ls >out
```
a. **4** *b.* **2** *c.* **1** *d.* **3** *e.* **0**

141. Which command line tells you the recursive count of all pathnames under the current directory and all subdirectories?
a. **find | wc** *b.* **ls | wc** *c.* **wc ***
d. **wc "$PWD"** *e.* **wc .**

142. 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. **100** *b.* **160** *c.* **60** *d.* **200** *e.* **40**

143. If file **foo** contains 99 lines, each of which is the two-digit line number of the line in the file (**01** through **99**), what is the output on your screen of this command:
```
sort foo foo | tail -4 | head -1
```
a. **01 01** *b.* **96 96** *c.* **98**
d. **04 04** *e.* **96**

144. If file **foo** contains 9 lines, each of which is the one-digit line number of the line in the file (**1** through **9**), what is the output on your screen of this command:
```
cat foo foo | sort -r | head -4 | tail -1
```
a. **5** *b.* **9** *c.* **8** *d.* **7** *e.* **6**

145. In an empty directory, what is the output on your screen after this command line:
```
ls nosuchfile 2>out
```
a. **2 not found** *b.* **nosuchfile**
c. no output *d.* **nosuchfile 2 not found**
e. **nosuchfile not found**

146. The option to **ls** that shows which names are directories is:
a. **-l** *b.* **-i** *c.* **-1** *d.* **-d** *e.* **-a**

147. If my current directory is **/etc**, which of these pathnames is equivalent to the pathname **/etc/x/y**?
a. **/x/y** *b.* **../etc/x/y** *c.* **../etc/y**
d. **./etc/x/y** *e.* **../x/y**

148. The basic purpose of a shell is:
a. to expand pathnames
b. to find and run commands
c. to format hard drives
d. to search for strings inside text files
e. to program system administration backup procedures

149. What is the output on your screen of this command line:
```
echo bat >pig ; echo one | tail pig
```
a. **bat** *b.* an error message
c. **one** *d.* **one** followed by **bat**
e. **bat** followed by **one**

150. What is the output on your screen of this command line:
```
echo pig >one ; echo bat | tail one
```
a. **pig** *b.* **bat** followed by **pig**
c. an error message *d.* **pig** followed by **bat**
e. **bat**

151. 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**
a. **2** *b.* **5** *c.* **8** *d.* **0** *e.* **3**

152. In an empty directory, what is the output on your screen after this command line:
```
ls 2>/dev/null nosuchfile
```
a. no output
b. **ls: 2>/dev/null nosuchfile: No such file or directory**
c. **nosuchfile**
d. **ls: nosuchfile: No such file or directory**
e. **ls: /dev/null: No such file or directory**

153. What is the output of this command line in an empty directory:
```
touch 1 .1 23 .23 456 ; echo [12]*
```
a. **1 .1 23 .23 456**
b. an error message from **echo** saying **[ab]*** does not exist
c. **1 23**
d. **1 .1 23 .23**
e. **[12]***

154. What would you type to find the string **tony** in the file **/etc/passwd**?
a. **find /etc/passwd -user tony -print**
b. **find /etc/passwd -name tony -print**
c. **grep tony /etc/passwd**
d. **grep /etc/passwd tony**
e. **cat tony /etc/passwd**

155. What command shows all the lines in file **cow** that contain the string **pig**?
a. **grep pig <cow** *b.* **grep cat cow pig**
c. **cat cow > grep pig** *d.* **grep pig >cow**
e. **grep cow pig**

156. What is the output of this command line in an empty directory:
```
touch .a .b .c ; echo .*
```
a. **.***
b. **.a .b .c**
c. no output
d. an error message from **echo** saying **.*** does not exist
e. **. .. .a .b .c**

157. In an empty directory, what happens after this command line:
```
touch a b c ; mv a b c
```
a. an error message: **mv: target 'c' is not a directory**
b. the files **a** and **b** are moved into the directory **c**
c. the files **a**, **b**, and **c** are moved to the current directory
d. the files **a**, **b**, and **c** are moved to the directory **c**
e. the files **a** and **b** are appended to the file **c**

158. If a shell token with a GLOB pattern contains two slashes, how many slashes can be in each matched pathname?
   a. one, two, or more *b.* exactly two *c.* one or two
   d. zero, one, or two *e.* two or more

159. 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
```
   a. **8** *b.* **3** *c.* **0** *d.* **5** *e.* **16**

160. In an empty directory, what is the output on your screen after this command line:
```
touch 1 2 .a .b ; echo .*
```
   a. **.***
   b. **.a .b**
   c. **1 2**
   d. **. .. .a .b**
   e. an error message from **echo** saying **.*** does not exist

161. What is the output of this command line in an empty directory: **cat ***
   a. no output on screen
   b. an error message from **cat** saying ***** does not exist
   c. **. ..**
   d. **.**
   e. ***

162. 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/*
```
   a. **cow/.AA cow/.A1 cow/.BB**
   b. **cow/.AA cow/.A1 cow/.BB cow/.B.**
   c. no output
   d. **cow/.B.**
   e. **cow/***

163. If a shell GLOB pattern fails to match anything, what happens by default? The shell:
   a. passes the pattern unchanged to the command
   b. gives an error message and does not execute
   c. returns the closest match to the pattern
   d. removes the pattern and passes nothing
   e. gives a warning message but continues

164. What is the output of this command line in an empty directory:
```
touch .12 .345 .6789 ; echo .??*
```
   a. **.12 .345 .6789**
   b. **. .. .12 .345 .6789**
   c. an error message from **echo** saying **.??*** does not exist
   d. **.??***
   e. no output

165. Which pathname almost always leads to the same file named: **/etc/passwd**
   a. **./etc/passwd** *b.* **/./etc/./passwd**
   c. **/etc/passwd/.** *d.* **/etc/../passwd**
   e. **/etc/etc/../passwd**

166. What is the result of this exact command line: **cat /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 contents of the files **/foo** and **bar** will be displayed
   d. file **/foo** will be copied to **bar**
   e. the names of the pathnames **/foo** and **bar** will be displayed

167. 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 **[ALT]** key.
   b. Type the first part of the command or file name and press the **[TAB]** key.
   c. Type the first part of the command or file name and press the **[CTRL]-[C]** key.
   d. Type the first part of the command or file name and press the **[ALT]-[F1]** key.
   e. Type the first part of the command or file name and press the **[CTRL]-[D]** key.

168. If file **x** contains ten lines, and file **y** contains twenty lines, then how many lines are in file **cat** after this command line:
```
sort x y >z ; tail -5 x >x ; sort x y z >cat
```
   a. **50** *b.* **40** *c.* **55** *d.* **60** *e.* **0**

169. What is the *current directory*?
   a. The directory named **/current**
   b. The directory that your shell (or any Unix process) is in now
   c. The directory into which you are placed when you first log in
   d. The directory named **..** (dot dot)
   e. This is where "root" goes when "root" logs in to the system

170. Which *CTRL* key will erase a full line of typing in a terminal window?
   a. **^C** *b.* **^R** *c.* **^D** *d.* **^U** *e.* **^I**

171. In an empty directory, what is the output on your screen after this command line:
```
echo hi >a ; ls >wc -l
```
a. **a** *b.* **0** *c.* **2**
d. **1** *e.* no output

172. 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. **cat a >foo ; cat b >>foo**
b. **cp a >foo ; cp b >>foo**
c. **mv a b >foo**
d. **echo a b >foo**
e. **cp a b >foo**

173. How many lines are in file **out** after this command line:
```
echo hi >dog >out >cat
```
a. **2** *b.* **4** *c.* **1** *d.* **0** *e.* **3**

174. What is the output of this successful command sequence?
```
cd /home/dir ; mkdir one ; mkdir two ; pwd
```
a. **/home/dir/one** *b.* **/home/dir/two**
c. **/home/dir** *d.* **/two**
e. **/home/dir/one/two**

175. In an empty directory, how many lines are in file **foo** after this command line:
```
ls  nosuchfile  .  ..  2>foo
```
a. **4** *b.* **3** *c.* **0** *d.* **1** *e.* **2**

176. Which pathname almost always leads to the same file named: **/bin/ls**
a. **./bin/ls** *b.* **/./bin/./ls**
c. **/bin/../ls** *d.* **/bin/./bin/../ls**
e. **/./bin/./ls/.**

177. 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 options, no arguments.
d. Two arguments, one of which is a single option and the other is a pathname.
e. Two arguments, no options.

178. If file **foo** contains 9 lines, each of which is the one-digit line number of the line in the file (**1** through **9**), what is the output on your screen of this command:
```
cat foo foo | cat | tail -4 | head -1
```
a. **7** *b.* **9** *c.* **5** *d.* **6** *e.* **8**

179. 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 -4 | head -1
```
a. **6** *b.* **8** *c.* no output
d. **1** *e.* **4**

180. If file **foo** contains 9 lines, each of which is the one-digit line number of the line in the file (**1** through **9**), what is the output on your screen of this command:
```
sort foo foo | tail -5 | head -1
```
a. **9** *b.* **1 1** *c.* **5 5** *d.* **1** *e.* **7**

181. How many arguments does the shell pass to this **echo** command:
```
echo one two three >four five
```
a. **4** *b.* **5** *c.* **3** *d.* **6** *e.* **2**

182. Which of these commands always returns you to your account HOME directory?
a. **cd home** *b.* **cd** *c.* **cd ..**
d. **cd /home** *e.* **cd /home/..**

183. 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**?
a. **cp ../../etc/passwd /me/foo**
b. **cp ../etc/passwd ../me/foo**
c. **cp me/../../etc/passwd me/foo**
d. **cp ../home/me/../etc/passwd ./me/./foo**
e. **cp ./me/../etc/passwd ../home/me/foo**

184. In a directory that contains only the file **foo**, what happens after this command:
```
mv foo bar
```
a. there is only the file named **bar** in the directory now
b. there is a copy of the file named **foo** in the file named **bar**
c. an empty file named **bar** is created
d. the command fails because **bar** is not a directory
e. the command fails because the name **bar** does not exist

185. 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
```
a. the directory **x** is still empty
b. the command fails because the path **x/../../me** does not exist
c. the directory **x** now contains only a file named **y**
d. there is a second copy of the file **fil** in the file named **y**
e. the command fails because the path **x/./fil** does not exist

186. In an empty directory, how many words are in file **out** after this command line:
```
touch a ; ls >out
```
a. **2** *b.* **4** *c.* **0** *d.* **1** *e.* **3**

187. Which command line lists all possible utilities available for compiling programs?
a. **grep 'compile' /etc/** *b.* **man compile**
c. **find compile** *d.* **locate compile**
e. **man -k compile**

188. What is the output of this command line in an empty directory: **`echo *`**
   a. **`.  ..`**
   b. an error message from **`echo`** saying **`*`** does not exist
   c. **`*`**
   d. no output on screen
   e. **`.`**

189. What is the output on your screen of this command line:
```
echo hi >hi ; head hi >hi ; wc hi
```
   a. **`1 1 2 hi`** *b.* no output *c.* **`1 1 3 hi`**
   d. **`2 2 4 hi`** *e.* **`0 0 0 hi`**

190. What command displays the sizes of files in the current directory?
   a. **`cat -s`** *b.* **`ps -l`** *c.* **`ls -l`**
   d. **`ls -p`** *e.* **`ps -s`**

191. What can you do to get back (redo) the last command you typed?
   a. Type **`[CTRL]-[ALT]-[UP]`** *b.* Type **`[ALT]-[F2]`**
   c. Use the "**`PageUp`**" key. *d.* Use the "**`UpArrow`**" key.
   e. Type **`[CTRL]-[BACKSPACE]`**

192. What is your HOME directory?
   a. The directory into which you are placed when you first log in
   b. The directory that your shell is in now
   c. The directory named **`/home`**
   d. The top directory of the Unix/Linux/BSD/OSX file system tree
   e. This is where "root" goes when "root" logs in to the system

193. Give the minimum number of directories in this pathname: **`/a/b/c/d`**
   a. **`2`** *b.* **`3`** *c.* **`5`** *d.* **`1`** *e.* **`4`**

194. 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
```
   a. the command fails because the path **`./dir/../new`** does not exist
   b. the command fails because the path **`../myhome/old`** does not exist
   c. there is a second copy of the file **`new`** in the file named **`old`**
   d. the parent directory of **`dir`** now has a file named **`old`** in it
   e. the directory **`dir`** now contains only a file named **`old`**

195. 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
```
   a. the directory **`mt`** now contains two files
   b. the command fails because the path **`./mt/../cat`** does not exist
   c. the directory **`mt`** is still empty
   d. the directory **`mt`** now has a file named **`dog`** in it
   e. the file named **`cat`** is now renamed to **`dog`**

196. In a directory containing one file named **`mt`**, what is the output on your screen after this command line: **`ls 2>/dev/null nosuchfile`**
   a. no output
   b. **`ls: nosuchfile: No such file or directory`**
   c. **`nosuchfile`**
   d. **`bash: 2>/dev/null: command not found`**
   e. **`mt`**

197. 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/????
```
   a. **`dir/.123 dir/.124`**
   b. **`dir/????`**
   c. **`dir/.123 dir/.124 dir/.???`**
   d. no output
   e. **`echo: dir/????: No such file or directory`**

198. 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 */.`**
   a. **`*/.`**
   b. an error message because **`*/.`** does not exist
   c. 15 directory names
   d. 25 pathnames
   e. no output

199. 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
```
   a. **`30`** *b.* **`50`** *c.* **`0`** *d.* **`60`** *e.* **`100`**

200. Which pathname almost always leads to the same file named: **`/etc/shadow`**
   a. **`/etc/shadow/./.`** *b.* **`/etc/shadow/../..`**
   c. **`/etc/../../shadow`** *d.* **`/./../etc/./shadow`**
   e. **`./../etc/shadow`**

201. Which command pipeline outputs the count of the number of manual page titles that contain the keyword "sort"?
   a. **`wc -k sort`** *b.* **`wc man sort`**
   c. **`man -k sort | wc`** *d.* **`man sort ; wc`**
   e. **`man sort | wc`**

202. In the output of the command **`ls -a`**, the one-character name **`.`** signifies what?
   a. A current file.
   b. The parent directory.
   c. The ROOT directory.
   d. A name with an unprintable character.
   e. The current directory.

203. Which command line displays all the names in the current directory that are exactly three digits long (and no others)?
   a. **`echo [?][?][?]`** *b.* **`echo [3][3][3]`**
   c. **`echo ???`** *d.* **`echo [0-9][0-9][0-9]`**
   e. **`echo [1-3][1-3][1-3]`**

204. 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`**
   a. the directory **`mt`** now contains a file named **`foo`**
   b. the command fails because **`mt/bar`** is not a directory
   c. the directory **`mt`** is still empty
   d. the directory **`bar`** now contains a file named **`foo`**
   e. the directory **`mt`** now contains a file named **`bar`**

205. 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`**?
   a. **`cp ../etc/passwd ./me/foo`**
   b. **`cp ./me/../etc/passwd ../home/me/foo`**
   c. **`cp ../home/me/../etc/passwd ./me/./foo`**
   d. **`cp ../etc/passwd ../me/foo`**
   e. **`cp ../../etc/passwd /me/foo`**

206. Given an existing file of yours named **`cat`**, what is the output on your screen of this command line: **`echo xx >cat ; head cat >cat ; wc cat`**
   a. **`1 1 2 cat`** *b.* **`0 0 0 cat`** *c.* no output
   d. **`2 2 4 cat`** *e.* **`1 1 3 cat`**

207. If file **`foo`** contains 9 lines, each of which is the one-digit line number of the line in the file (**`1`** through **`9`**), what is the output on your screen of this command:
```
sort foo foo | tail -4 | head -1
```
   a. **`4 4`** *b.* **`6`** *c.* **`8`** *d.* **`1 1`** *e.* **`6 6`**

208. If my current working directory is **`/var`**, which command copies the password file into directory **`/var/ian`** under the name **`bar`**?
   a. **`cp ../../etc/./passwd /ian/bar`**
   b. **`cp ./ian/../../etc/passwd ian/bar`**
   c. **`cp ././ian/../etc/passwd ../var/ian/bar`**
   d. **`cp ../var/./ian/../etc/passwd ./ian/./bar`**
   e. **`cp ./../etc/passwd ../ian/bar`**

209. What is true about this command line: **`date >ls ; ls -ls ls >wc`**
   a. The **`ls`** command receives the output of **`date`** on standard input.
   b. The shell finds and executes three different commands.
   c. The **`wc`** command counts the output of the **`ls`** command.
   d. The file **`wc`** has one line in it.
   e. The **`ls`** command is executed more than once.

210. In an empty directory, what is the output on your screen after this command line:
```
echo hi >a ; sort * 1>/dev/null
```
   a. **`sort: 1>/dev/null: No such file or directory`**
   b. **`a`**
   c. **`hi`**
   d. no output
   e. **`sort: *: No such file or directory`**

211. If my current directory is **`/lib`**, which of these pathnames is equivalent to the file name **`/lib/foo`**?
   a. **`./foo`** *b.* **`/foo`** *c.* **`../lib/foo/.`**
   d. **`../foo`** *e.* **`./lib/foo`**

212. Which of the following statements is true about this command line:
```
<dir/c cat dir/d
```
   a. The command **`cat`** sees two arguments.
   b. The command **`cat`** sees only one argument.
   c. The command **`dir/c`** sees only one argument
   d. The command **`dir/c`** sees two arguments.
   e. The command is always invalid.

213. If file **`twenty`** contains twenty lines, and file **`thirty`** contains thirty lines, then how many lines are output on your screen by this command line:
```
tail thirty | cat twenty
```
   a. **`20`** *b.* **`21`** *c.* **`0`** *d.* **`50`** *e.* **`30`**

214. In an empty directory, how many lines are in file **`out`** after this command line:
```
ls . .. nosuchfile 2>out
```
   a. **`0`** *b.* **`1`** *c.* **`3`** *d.* **`4`** *e.* **`2`**

215. To prevent disconnections when using the Windows version of **`PuTTY`**, you should make this configuration change:
   a. use your student number as your password
   b. set the seconds between keepalives to 55
   c. your password will not echo on your screen as you type
   d. log in using your Blackboard userid
   e. use your ACSIS password as your password

216. Which command line below outputs only lines 11-15 of the Unix password file?
   a. **`head -10 /etc/passwd | tail -15 /etc/passwd`**
   b. **`head -15 /etc/passwd | tail -5 /etc/passwd`**
   c. **`head -15 /etc/passwd | tail -5`**
   d. **`tail -10 /etc/passwd | head -15 /etc/passwd`**
   e. **`tail -15 /etc/passwd | head -10`**

217. How many lines are in the file **`bar`** after this command line:
```
echo hi >x ; echo ho >>x ; cat x x >bar
```
   a. **`0`** *b.* **`1`** *c.* **`6`** *d.* **`4`** *e.* **`2`**

218. 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. **0** *b.* **5** *c.* no output
   d. **3** *e.* **2**

219. 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
```
   a. **80** *b.* **0** *c.* **160** *d.* **50** *e.* **30**

220. What is the correct syntax to redirect both standard output and standard error into the same output file?
   a. **date 2>1 >out** *b.* **date >out 2>&1**
   c. **date 1>out 2>1** *d.* **date 2>&1 >out**
   e. **date 1>out 2>out**

221. Which command line displays the contents of the Unix **passwd** file one page at a time?
   a. **less /etc/passwd** *b.* **/etc/passwd | less**
   c. **/etc/passwd cat less** *d.* **cat /etc/passwd less**
   e. **cat less | /etc/passwd**

222. Which command line does *not* show any lines from inside the file **bat**?
   a. **sort bat** *b.* **head bat** *c.* **less bat**
   d. **tail bat** *e.* **ls bat**

223. In which section of the manual do you find standard commands?
   a. 8 *b.* 2 *c.* 3 *d.* 4 *e.* 1

224. If **foo** is a sub-directory that contains only the file **bar**, what happens after this command: **mv ./foo/bar foo/../me**
   a. the directory **foo** now contains only a file named **me**
   b. the command fails because the name **./foo/bar** does not exist
   c. the command fails because the name **me** does not exist
   d. there is a second copy of the file **bar** in the file named **me**
   e. the directory **foo** is now empty

225. 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
```
   a. the directory **mt** is still empty
   b. the command fails because the path **mt/../../me** does not exist
   c. the directory **mt** now contains only a file named **y**
   d. there is a second copy of the file **foo** in the file named **y**
   e. the command fails because the path **mt/./foo** does not exist

226. In a directory containing one file named **dog**, what is the output on your screen after this command line: **1>/dev/null ls ***
   a. **dog**
   b. no output
   c. **bash: 1>/dev/null: command not found**
   d. **ls: *: No such file or directory**
   e. *****

227. **Did you read all the words of the test instructions on page one?**
   a. **Sim** *(Yes - Portuguese)* *b.* **Jes** *(Yes - Esperanto)*
   c. **Taip** *(Yes - Lithuanian)* *d.* **Tak** *(Yes - Polish)*
   e. **Igen** *(Yes - Hungarian)*