PRINT Name: _____ **LAB Section:** ☐☐☐

Test Version: 371   **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 both **NO. OF QUESTIONS** and **NO. OF STUDENTS**
☞ Fill in the bubbles with pencil only, no pen. Enter your NAME, Test Version, and answers.
☞ Manage your time. Answer questions you know, first. One Answer per question.
☞ The answer to the questions below about reading/doing all these test instructions is: **Jes**

_____

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

2. **My three-digit Lab Section number is:**
   a. My lab room number, e.g. **T303, T230, P305, T321**
   b. My lecture room number, e.g. **T119**
   c. The Test Version number printed in the top left corner.
   d. The timetable section number of my weekly 2-hour lab period.
   e. My lecture section number, e.g. **010** or **020**.

3. If file **a** contains 2 lines, and file **b** contains 3 lines, then how many lines are output
   on your screen by this command line: **cat b | sort a**
   a. **3**   b. **2** followed by **3**   c. **2**
   d. **3** followed by **2**   e. **5**

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

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

6. 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. **9**   b. **6**   c. **7**   d. **8**   e. **5**

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

8. 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**

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

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

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

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

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

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

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

16. What is in the file **bar** after this command line:
    ```
    echo hi >x ; echo ho >x ; mv x y >bar
    ```
    a. **hi**   *b.* **ho**
    c. nothing (empty file)   *d.* no such file (nonexistent)
    e. **hi** followed by **ho**

17. 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.* **70**   *c.* **50**   *d.* **0**   *e.* **80**

18. 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. **96**   *b.* **01 01**   *c.* **98**
    d. **96 96**   *e.* **04 04**

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

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

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

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

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

24. 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 **cat** does not exist
    b. the directory **pig** now contains only a file named **cat**
    c. the directory **pig** is now empty
    d. the command fails because the name **pig/./../cat** does not exist
    e. there is a second copy of the file **dog** in the file named **cat**

25. What is the output of this command line in an empty directory:
    ```
    touch x .a .ab .cde .fghi ; echo .??*
    ```
    a. **.??***
    b. **. .. .a .ab .cde .fghi**
    c. an error message from **echo** saying **.??*** does not exist
    d. **.cde .fghi**
    e. **.ab .cde .fghi**

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

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

28. 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.* **0**   *c.* **5**   *d.* **16**   *e.* **3**

29. 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. **6**   *b.* **8**   *c.* **6 6**   *d.* **4 4**   *e.* **1 1**

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

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

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

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

34. 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. **0**   b. **55**   c. **60**   d. **40**   e. **50**

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

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

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

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

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

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

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

42. If file **foo** contains 9 lines, each of which is the one-digit line number of the line in the file (**1** through **9**), what is the output on your screen of this command:
    cat foo foo | sort | tail -4 | head -1
    a. **4**   b. **8**   c. **6**
    d. no output   e. **1**

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

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

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

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

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

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

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

50. 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.* **12**   *d.* **8**   *e.* **10**

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

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

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

54. 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. **2**   *b.* none   *c.* **3**   *d.* **4**   *e.* **1**

55. 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. **40**   *b.* **200**   *c.* **60**   *d.* **100**   *e.* **160**

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

57. 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. **5**   *b.* **0**   *c.* **2**   *d.* **8**   *e.* **3**

58. 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. **2**   *b.* **1** followed by **2**   *c.* no output
    d. **1**   *e.* **2** followed by **1**

59. 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/????**
    b. **dir/.123 dir/.124 dir/.???**
    c. no output
    d. **dir/.123 dir/.124**
    e. **echo: dir/????: No such file or directory**

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

61. 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. **8**   *b.* **9**   *c.* **5**   *d.* **6**   *e.* **7**

62. 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 directory **mt/..** now contains a file named **bar**
    c. the command fails because path **../me/bar** does not exist
    d. the command fails because path **./mt/../foo** does not exist
    e. the directory **mt** now contains only a file named **bar**

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

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

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

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

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

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

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

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

71. 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**

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

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

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

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

76. 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 me/../../etc/passwd me/foo**
    d. **cp ../home/me/../etc/passwd ./me/./foo**
    e. **cp ../etc/passwd ../me/foo**

77. 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/./.**

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

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

80. 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. the directory **foo** is now empty
    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** now contains only a file named **me**

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

82. 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 ../../bin/./ls /foo/xx**
    b. **cp ./foo/../../bin/ls ./foo/./xx**
    c. **cp ./../bin/ls ../foo/xx**
    d. **cp ././foo/../bin/ls ../home/foo/xx**
    e. **cp ../home/./foo/../bin/ls foo/xx**

83. The purpose of the **PS1** shell variable is:
    a. to protect your HOME directory from access
    b. to list your suspended jobs
    c. to allow access to the ROOT directory
    d. to find patterns inside a text file
    e. to set the shell prompt

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

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

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

87. 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 **cat** does not exist
    b. the command fails because the name **cow/./../cat** does not exist
    c. there is a second copy of the file **dog** in the file named **cat**
    d. the directory **cow** now contains only a file named **cat**
    e. the directory **cow** is now empty

88. 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.* **2**   *c.* **4**   *d.* **5**   *e.* **1**

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

90. To leave a shell and let the terminal window close, type:
    a. **quit**   *b.* **bye**   *c.* **[CTRL-C]**
    d. **exit**   *e.* **q**

91. 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. **4**   *b.* **5**   *c.* **2**   *d.* **3**   *e.* **1**

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

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

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

95. How do I search for the string **foo** in the text display output from the **man** command?
    - *a.* **/foo**
    - *b.* **search foo**
    - *c.* **@foo**
    - *d.* select "**Search**" in the menu
    - *e.* **find foo**

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

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

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

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

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

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

102. 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**

103. 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/***
    - *c.* **dir/.f.**
    - *d.* no output
    - *e.* **dir/.on dir/.tw dir/.th**

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

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

106. 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.* **cat f1 f2 >bar**
    - *d.* **mv f1 f2 >bar**
    - *e.* **echo f1 f2 >bar**

107. 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**

108. 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.* **1**
    - *d.* **8 8**
    - *e.* **8**

109. 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. **bash: 2>/dev/null: command not found**
   b. **mt**
   c. **ls: nosuchfile: No such file or directory**
   d. no output
   e. **nosuchfile**

110. 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. **0**   b. **50**   c. **160**   d. **80**   e. **30**

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

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

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

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

115. How do you search for the word **nongraphic** in the man page for **ls**?
   a. type **man -k nongraphic** at the shell
   b. type **man nongraphic | grep ls** at the shell
   c. type **man ls** at the shell, then **/nongraphic**
   d. type **man ls -nongraphic** at the shell
   e. type **man ls** at the shell, then **^F** (CTRL-F), then **nongraphic**

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

117. If file **a** contains 2 lines, and file **b** contains 3 lines, then how many lines are in file **c** after this command line:
   sort a b >c ; cat a >>b ; sort c b >c a
   a. **8**   b. **5**   c. **0**   d. **7**   e. **12**

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

119. 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. **0**   e. **50**

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

121. What is the result of this exact command line: **ls /foo bar**
   a. the two text strings **/foo** and **bar** will be displayed
   b. the names of the pathnames **/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. all the files under directory **/foo** with the name **bar** will be displayed

122. 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. none   d. **4**   e. **2**

123. 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. **0 0 0 cat**   b. **1 1 2 cat**   c. **2 2 4 cat**
   d. no output   e. **1 1 3 cat**

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

125. 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. `.*`
    d. `. .. .a .b .c`
    e. no output

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

127. 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 only the file named `me` in the directory now
    c. the command fails because `bar` is not a directory
    d. there is a second copy of the file `bar` in the file named `me`
    e. an empty file named `me` is created

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

129. 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. `2`   b. `5`   c. `3`
    d. no output   e. `0`

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

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

132. 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. `20`   b. `0`   c. `50`   d. `40`   e. `30`

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

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

135. What is the result of this exact command line: `echo /foo bar`
    a. the names of the pathnames `/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 contents of the files `/foo` and `bar` will be displayed

136. What command can you use to delete an empty directory?
    a. `mvdir`   b. `delete`   c. `erase`
    d. `rmdir`   e. `deldir`

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

138. 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/*`
    b. `cow/.AA cow/.A1 cow/.BB`
    c. `cow/.B.`
    d. no output
    e. `cow/.AA cow/.A1 cow/.BB cow/.B.`

139. In a directory that contains only the file `foo`, what happens after this command:
    ```
    mv foo bar
    ```
    a. the command fails because `bar` is not a directory
    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 the name `bar` does not exist
    e. there is only the file named `bar` in the directory now

140. In the output of `ls -a`, the two-character name `..` signifies what?
    a. The parent directory.
    b. The current directory.
    c. A file or directory with double links.
    d. The ROOT directory.
    e. It begins every name that is hidden.

141. 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 current directory
   b. the directories **a** and **b** are moved into the directory **c**
   c. an error message: **mv: target 'c' is not a directory**
   d. the directories **a**, **b**, and **c** are moved to the directory **c**
   e. the directories **a** and **b** are appended to the directory **c**

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

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

144. In an empty directory, what is the output on your screen after this command line:
     date >.foo >.bar ; ls *
   a. *****
   b. no output
   c. an error message from **ls** saying ***** does not exist
   d. **.   ..   .foo   .bar**
   e. **.foo   .bar**

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

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

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

148. 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 directory **mt** now contains only a file named **bar**
   c. the parent directory of **mt** now contains a file named **bar**
   d. the command fails because the path **../me/bar** does not exist
   e. the command fails because the path **./mt/../foo** does not exist

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

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

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

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

153. 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**   *b.* **96 96**   *c.* **98**
   d. **04 04**   *e.* **02**

154. 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**

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

156. 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**

157. In the output of the command **ls -a**, a dot (period) that *begins* a name signifies what?
  a. A name that is hidden.
  b. A current file.
  c. A name with an unprintable character.
  d. The parent directory.
  e. The current directory.

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

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

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

161. 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 ./../etc/passwd ../ian/bar**
  c. **cp ../var/./ian/../etc/passwd ./ian/./bar**
  d. **cp ./../ian/../etc/passwd ../var/ian/bar**
  e. **cp ./ian/../../etc/passwd ian/bar**

162. 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**   *c.* **8 8**   *d.* **9**   *e.* **1**

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

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

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

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

167. 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/.**

168. 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 not found`
    c. `nosuchfile 2 not found`   *d.* no output
    e. `nosuchfile`

169. 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. `24`   *b.* `5`   *c.* `7`   *d.* `12`   *e.* `0`

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

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

172. 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. `a b`
    c. an error message from `echo` saying `.??*` does not exist
    d. `.??*`
    e. `. .. .1 .2`

173. 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. `echo a b >foo`
    c. `mv a b >foo`
    d. `cp a >foo ; cp b >>foo`
    e. `cp a b >foo`

174. 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 ?[MmEe]?`
    c. `echo *[MmEe]*`   *d.* `echo *[Mm][Ee]*`
    e. `echo *(M,m,E,e)*`

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

176. 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. there is only the file named `moo` in the directory now
    d. an empty file named `moo` is created
    e. the command fails because `bar` is not a directory

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

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

179. 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. `4`   *b.* none   *c.* `2`   *d.* `3`   *e.* `1`

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

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

182. Which of these pathnames is *not* an absolute pathname (after all shell expansions)?
    a. `~/foo`   *b.* `$HOME/foo`   *c.* `/foo`
    d. `foo`   *e.* `/../foo`

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

184. 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/bin/../bash**

185. 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.* **1**   *c.* **3**   *d.* **4**   *e.* **2**

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

187. 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

188. 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. **50**   *b.* **30**   *c.* **60**   *d.* **100**   *e.* **0**

189. 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.* **2**
    d. no output   *e.* **0**

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

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

192. 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 **cat** does not exist
    b. there is a second copy of the file named **dog** in the file named **cat**
    c. the command fails because the name **pig/./../cat** does not exist
    d. the directory **pig** now contains only a file named **cat**
    e. the directory **pig** is now empty

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

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

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

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

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

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

199. 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. **0**   *b.* **50**   *c.* **80**   *d.* **30**   *e.* **20**

200. 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.* **grep './?' /etc/passwd**
   c. **search '?' /etc/passwd**   *d.* **find '?' /etc/passwd**
   e. **grep /etc/passwd '?'**

201. 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. **5 5**   *b.* **1**   *c.* **9**   *d.* **1 1**   *e.* **7**

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

203. 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]-[C]**   *c.* **[ALT]**
   d. **[CTRL]-[D]**   *e.* **[ALT]-[F1]**

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

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

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

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

208. 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. **0**   *b.* **60**   *c.* **30**   *d.* **20**   *e.* **10**

209. 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.* **5**   *c.* **3**   *d.* **0**   *e.* **6**

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

211. 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. no output
   d. **cat: foo: No such file or directory**
   e. **hi >foo >bar**

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

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

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

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

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

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

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

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

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

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

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

223. How many arguments and options are there to the command: **wc -wc wc**
    a. Two arguments, no options.
    b. Two command line arguments, one of which contains two bundled options.
    c. Two arguments, one of which is a single option and the other is a pathname.
    d. Two command name arguments and two bundled options.
    e. Two options, no arguments.

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

225. 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**

226. 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. **bash: 2>/dev/null: command not found**
    b. **nosuchfile**
    c. **ls: nosuchfile: No such file or directory**
    d. no output
    e. **dog**

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