1. What will be the effect of the following commands?  
    a. who | grep ‘root’

The who command is used to find a list of users who are logged on to the system and using the grep command we find whether ‘root’ user is currently logged in or not.

    b. ps aux | sort

The ps aux command is used to display current processes running in the system with complete listing and sort is used for sorting the ps aux output.

    c. date | cut -c12-16

The date command is used to display the current date and time of the system and using the cut command we extract and print only the time in hh:mm format.  
  
2. Write commands to:

a.  Find all logged-in users with usernames of at least four characters.

who | cut -d ' ' -f 1| grep -E “. {4,}"

    b.  Find all users on your system whose user ids are greater than 8.

cat /etc/passwd | cut -d: -f1,3 | grep -E '[0-9]{2}|[9]'

    c.  Find the number of users on your system whose user ids are greater than 8.

cat /etc/passwd | cut -d: -f3 | grep -E '[0-9]{2}|[9]'| wc -l

    d.  List all the files in your directory in decreasing order of file size.

ls -alS | grep -v '^d'  
  
3. a.  What is the purpose of grep?

Grep stands for ‘Global Regular Expression Print’. It matches the given regular expression or specified pattern with the provided file and accordingly displays matching lines.

    b.  Can grep be used to add, delete or change a line or character in a file? Why?

No grep cannot be used to add, delete or change a line or character in a file. It is used for pattern matching in a single or multiple files.

c.  Using grep, what is the command to find out if root is currently logged into the system.

who | grep ‘root’  
  
4. a.  What is a command to print every line containing the word UNIX in a file named intro?

grep unix intro

    b.  What is a command to print every line containing a number in a file named intro?

grep '[0-9]' intro