1 List all available shells on your Linux distribution.

```
user@AA3209-Ubuntu:~$ cat /etc/shells
# /etc/shells: valid login shells
/bin/sh
/bin/bash
/usr/bin/bash
/bin/rbash
/usr/bin/rbash
/bin/dash
/usr/bin/dash
/usr/bin/tmux
/usr/bin/screen
user@AA3209-Ubuntu:~$
```

2 Find general guidelines using man command for user password (Hint: passwd).

```
user@AA3209-Ubuntu:~$ man passwd
PASSWD(1)                       User Commands                       PASSWD(1)

NAME
       passwd - change user password

SYNOPSIS
       passwd [options] [LOGIN]

DESCRIPTION
       The passwd command changes passwords for user accounts. A normal user
       may only change the password for their own account, while the superuser
       may change the password for any account.  passwd also changes the
       account or associated password validity period.

   Password Changes
       The user is first prompted for their old password, if one is present.
       This password is then encrypted and compared against the stored
       password. The user has only one chance to enter the correct password.
       The superuser is permitted to bypass this step so that forgotten
       passwords may be changed.

       After the password has been entered, password aging information is
```

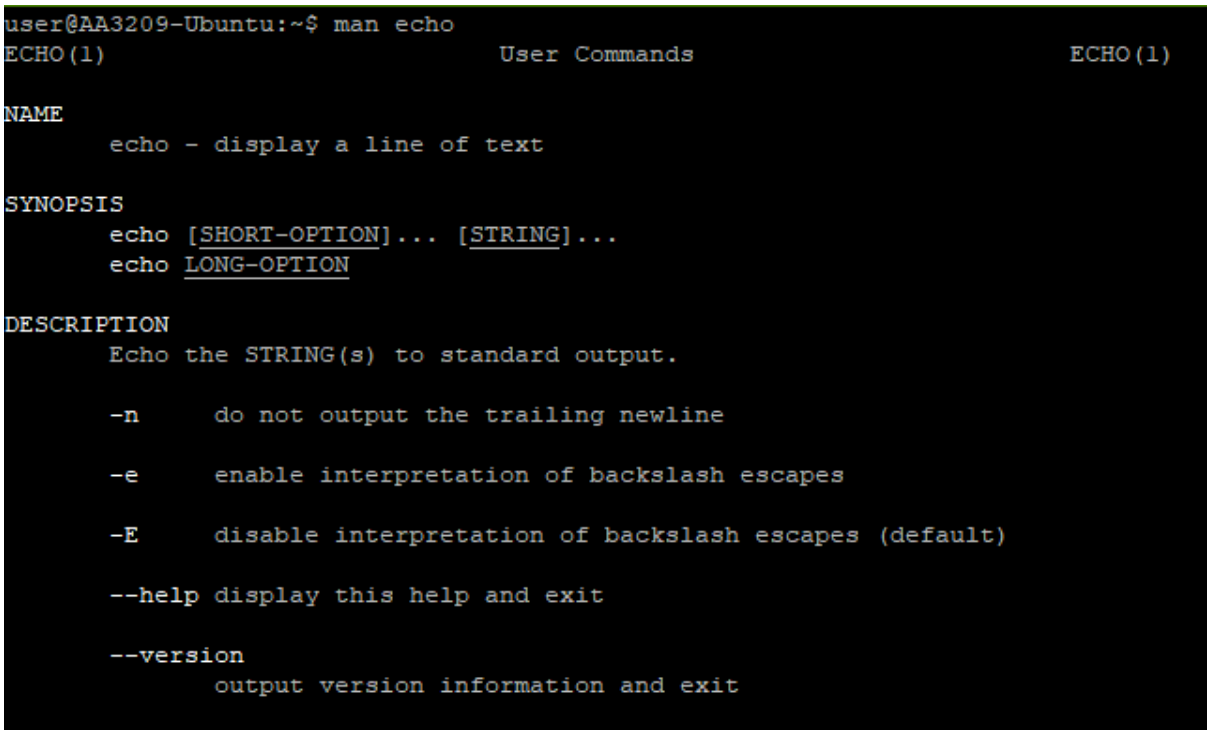
3 How can you change your user from regular to root user and back to regular?

```
user@AA3209-Ubuntu:~$ su
Password:
root@AA3209-Ubuntu:/home/user#
```

```
root@AA3209-Ubuntu:/home/user# exit
exit
user@AA3209-Ubuntu:~$
```

4 Find out what is the description of the following Linux commands:

- *echo*
- *free*
- *history*
- *w*



FREE(1) User Commands FREE(1)

NAME
free - Display amount of free and used memory in the system

SYNOPSIS
free [options]

DESCRIPTION
free displays the total amount of free and used physical and swap memory in the system, as well as the buffers and caches used by the kernel. The information is gathered by parsing /proc/meminfo. The displayed columns are:

total Total installed memory (MemTotal and SwapTotal in /proc/meminfo)

used Used memory (calculated as **total - free - buffers - cache**)

free Unused memory (MemFree and SwapFree in /proc/meminfo)

shared Memory used (mostly) by tmpfs (Shmem in /proc/meminfo)

buffers

HISTORY(3) Library Functions Manual HISTORY(3)

NAME
history - GNU History Library

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DESCRIPTION
Many programs read input from the user a line at a time. The GNU History library is able to keep track of those lines, associate arbitrary data with each line, and utilize information from previous lines in composing new ones.

HISTORY EXPANSION
The history library supports a history expansion feature that is identical to the history expansion in **bash**. This section describes what syntax features are available.

History expansions introduce words from the history list into the input stream, making it easy to repeat commands, insert the arguments to a previous command into the current input line, or fix errors in previous

```
W(1)                          User Commands                          W(1)

NAME
       w - Show who is logged on and what they are doing.

SYNOPSIS
       w [options] user [...]

DESCRIPTION
       w  displays  information  about the users currently on the machine, and
       their processes.  The header shows, in this order,  the  current  time,
       how  long  the  system  has  been running, how many users are currently
       logged on, and the system load averages for the past 1, 5, and 15  min□
       utes.

       The  following entries are displayed for each user: login name, the tty
       name, the remote host, login time, idle time, JCPU, PCPU, and the  com□
       mand line of their current process.

       The  JCPU  time  is the time used by all processes attached to the tty.
       It does not include past background jobs, but  does  include  currently
       running background jobs.
```

5 Give an example of all of the above commands and command outputs.

```
user@AA3209-Ubuntu:~$ echo lshw
lshw
```

```
user@AA3209-Ubuntu:~$ free
               total        used        free      shared  buff/cache   available
Mem:         1004808      154912      141104         628      708792      683136
Swap:        2009084       20860     1988224
```

```
user@AA3209-Ubuntu:~$ history
    1  history -w
    2  history -w
    3  exit
    4  cat /etc/shells
    5  man --help
    6  passwd user
    7  man passwd
    8  sudo passwd root
    9  su
   10  echo --help
   11  man echo
   12  man free
   13  man history
   14  man w
   15  echo lshw
   16  free
   17  history
```

```
user@AA3209-Ubuntu:~$ w
 14:12:17 up 25 days,  2:22,  1 user,  load average: 0.00, 0.00, 0.00
USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
user     pts/0    192.168.53.13    13:48    0.00s  0.03s  0.00s w
```