

CIS 90 - Fall 2012 - TEST 2 - 30 points

Honor Code:

This test is open book, open notes, and open computer. **HOWEVER, you must work alone. You may not share answers. You may not receive or give assistance to others.**

Name: _____
(type your name to indicate your agreement to abide by the honor code above)

Instructions:

Download and save this test to your computer. Fill out the form, **save it** and email it as an attachment to **risimms@cabrillo.edu** using your regular (non-Opus) email.

Please verify you actually sent a non-blank,
completed test to be graded!

Everyone should submit their test (completed or not) by the end of class.

If you need extra time, you can submit again by no later than 11:59PM. Only the last submittal will be graded.

Note to instructor:

- Q14-16 hiderocks T2 (sun-hwa)
- Q10-12 trouble-T2 (sun-hwa)
- Q13 set permissions on activities (sun-hwa)
- Q33 trick and treats for Benji (opus)

Note to Mac users:

Make sure Adobe Reader doesn't strip preceding /'s from your answers in saved PDF file.



Part 1 - Flashcard questions (1 point each)

[Q1] How many inodes are needed for two files, one symbolically linked to the other?

[A1] _____

[Q2] A new file named *original* is created
(**touch original**)
link1 and *link2* are hard linked to *original*
(**In original link1; In original link2**)
original is removed. What is the link count of *link1*?

[A2] _____

[Q3] What complete command would create a symbolic link named *accounts* to */etc/passwd*?

[A3] _____

[Q4] What command would remove read permission for the group on a directory named *Frost*?

[A4] _____

[Q5] Where are the permissions for a file kept?

[A5] _____

[Q6] What is the difference between?

find / | wc -l 2> /dev/null

and

find / 2> /dev/null | wc -l

[A6] _____

[Q7] Without x (execute) permission for a directory, is it possible to cd into it?

[A7] _____

[Q8] What redirection symbol can be used to append standard output (stdout) to the end of a file?

[A8] _____

[Q9] What command would set the permissions on the file *dogs* so that the owner would have full permissions, the group read and write, and no permissions for anyone else?

[A9] _____



Part 2 – Troubleshooting in Sun-Hwa (1 point each)

Login to Sun-Hwa, using your own username and VLab password:

```
ssh cislab\\$LOGNAME@sun-hwa
```

[Q10] There is some trouble on the island today that you need to troubleshoot and repair. What exactly is the problem?

[A10] _____

[Q11] What command can be used to fix the problem on Sun-Hwa?

[A11] _____

[Q12] Was your fix a permanent fix on Sun-Hwa?

[A12] _____

[Q13] Benji needs your help. He created an *activities* directory on Sun-Hwa and added files for some of his favorite activities. Everything was fine until he started trying some of those new `chmod` commands he learned about in Lesson 7. Now, the long listings for his *activities* directory are full of '?'s and permission errors. He shows you the following output:

```
[CISLAB\simben90@sun-hwa ~]$ ls -l activities/
ls: cannot access activities/easting: Permission denied
ls: cannot access activities/playing: Permission denied
ls: cannot access activities/barking: Permission denied
ls: cannot access activities/sleeping: Permission denied
ls: cannot access activities/marking: Permission denied
ls: cannot access activities/bathing: Permission denied
total 0
-????????? ? ? ? ? ? ? barking
-????????? ? ? ? ? ? ? bathing
-????????? ? ? ? ? ? ? easting
-????????? ? ? ? ? ? ? marking
-????????? ? ? ? ? ? ? playing
-????????? ? ? ? ? ? ? sleeping
[CISLAB\simben90@sun-hwa ~]$
```

What single command should Benji use to enable him to do normal long listings again on his *activities* directory?

[A13] _____



Part 3 – Rock Collecting on Sun-Hwa (1 point each)



[Q14] On Sun-Hwa, a file named after a *sedimentary* rock was hidden somewhere in the */opt* branch of the UNIX file tree. The rock file contains your name (first and last) which you will see when you `cat` it out. What is the absolute pathname of this file?

[A14] _____

[Q15] On Sun-Hwa, what are the permissions, in numerical format, on your *sedimentary* rock file?

[A15] _____

[Q16] On Sun-Hwa, how many other files in the `/opt` branch of the UNIX file tree have the same name as your `sedimentary` rock file (not the full pathname, just the filename)?

[A16] _____



Part 4 – George Washington’s white horse section (1 point each)

[Q17] On Sun-Hwa or Opus, what is the absolute pathname for the `/etc/passwd` file?

[A17] _____



Part 3 – Use Opus for the following questions (1 point each)

[Q18] Do a `dictionary` sort of the `words` in `/home/cis90/depot/randomwords` and email the last 15 of them to rsimms on Opus using the `mail` command and a subject of “Test Q18”. What single command line does all this (no `;`'s)?

[A18] _____

[Q19] From your home directory, what single command (no `;`'s) would create this this directory structure in your own home directory?

```
/home/cis90/simben $ tree laugh/
laugh/
├── it
│   ├── up
│   └── fuzzb11
└──
```

3 directories, 0 files

[A19] _____

[Q20] What single command (no ;'s) from your home directory would you use to populate the **fuzzball** directory above with two files named **HanSolo** and **Chewbacca**?

```
/home/cis90/simben $ tree laugh/
laugh/
├── it
│   └── up
│       └── fuzzball
│           ├── Chewbacca
│           └── HanSolo
```

3 directories, 2 files

[A20] _____

[Q21] From the **fuzzball/** directory shown above, what command would copy both the **HanSolo** and **Chewbacca** files to your **edits/** directory?

[A21] _____

[Q22] From your home directory, what single command (no ;'s) could you use to create a file named **MotorpsychoNightmare** containing "**Well, by the dirt 'neath my nails**" on the first line and "**I guess he knew I wouldn't lie**" on the second line in your **poems/** directory? To check your command, cat out your new file which should match Benji's output EXACTLY:

```
/home/cis90/simben $ cat poems/MotorpsychoNightmare
Well, by the dirt 'neath my nails
I guess he knew I wouldn't lie
```


[A22] _____

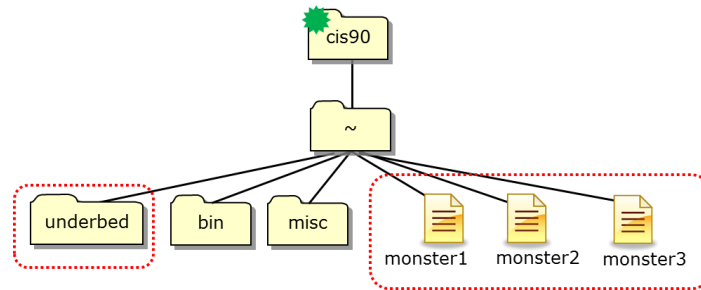
[Q23] From your home directory, what single command (no ;'s) could be used to remove all the files and directories created in Questions 19-22 above and nothing else?

This removal should include:


- *laugh/* directory in your home directory
- *MotorpsychoNightmare* in *poems/*
- *HanSolo* and *Chewbacca* in *edits/*

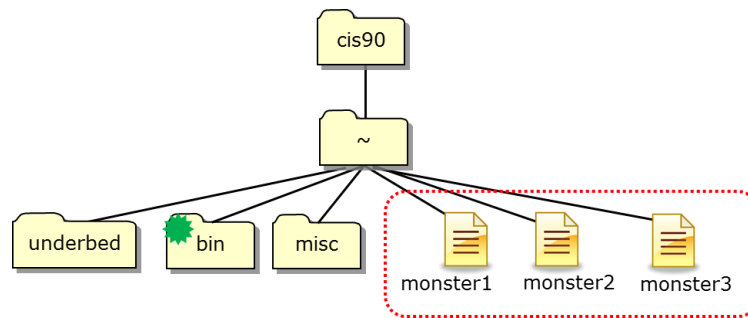
[A23] _____

[Q24] From the directory with the  what command line, using a ; to separate commands, create a directory named *underbed* and three files *monster1*, *monster2* and *monster3* in your home directory?



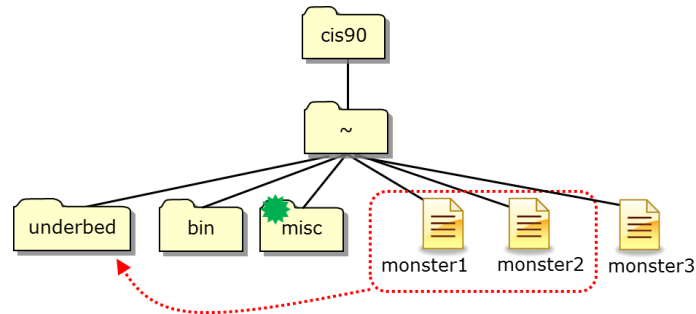
[A24] _____

[Q25] From the directory with the  what single command (no ;'s) would set the permissions on the three *monster* files to read/write/execute for the user, read/execute for group, and no permissions whatsoever for others?



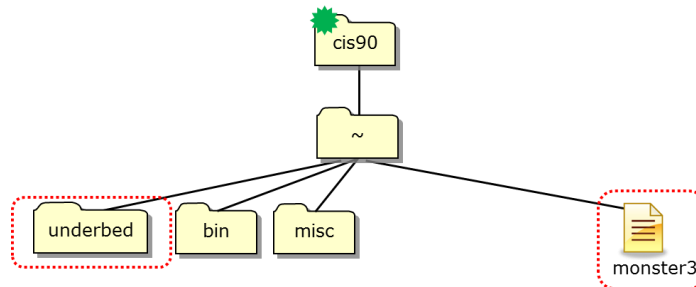
[A25] _____

[Q26] From the directory with the * what command would move *monster1* and *monster2* to the new *underbed* directory in your home directory?



[A26] _____

[Q27]] From the directory with the * what single command (no ;'s) would, without any interaction, remove only monster3, the files in the *underbed* directory and the *underbed* directory?



[A27] _____

[Q28] Given the file *expressions* contains these two lines:

```
/home/cis90/simben $ cat expressions
1971+sqrt(10000)+2679+5
1/0
```

What complete command (no ;'s) using **bc** would:

- empty a file named *results*
- input the math problems in *expressions*,
- write the calculated answers to the file *results*
- send all errors to the *bit bucket*?

[A28] _____

[Q29] Benji has the following file in his home directory:

```
/home/cis90/simben $ ls -l torbellino
-rw-rw-r-- 1 simben90 cis90 0 Apr  3 10:05 torbellino
```

If his umask value is **222** and he copies the *torbellino* file to *torbellino.bak*, what would the permissions be, in numerical form, on *torbellino.bak*?

[A29] _____

[Q30] What command would cause all future regular **files** to be created with:

- **read and write** permissions only for the owner
- **read** permission only for group
- **read** permission only for group

[A30] _____

Extra credit

[Q31] What are the permissions, in numeric format, on the **write** command?

[A31] _____

[Q32] On Sun-Hwa, what pipeline could you assemble that would use **find**, **xargs**, **ls**, **cut** and **sort** commands to make a list of the **inodes and sizes** for all the **sedimentary rock files** in **/opt**? There should be no error messages and the list should be sorted by size. Your inode numbers may differ from the ones below but the sizes should match exactly:

```
282311 30
282303 31
282301 32
282306 32
282307 32
282319 32
274463 33
282314 33
282315 33
282300 34
282305 34
282308 34
282309 34
282320 34
282323 34
282302 35
282304 35
282312 35
282322 35
282310 36
282317 36
282324 36
282313 37
282316 37
282318 37
282321 38
282325 41
```

[A32] _____

[Q33] On Opus, **cd** into */home/cis90/simben*

why does:

```
find -name *treat* 2< /dev/null
```

only find one of the treat files,

yet:

```
find -name *trick* 2> /dev/null
```

finds all the .trick files?

[A33] _____