CIS 90 - Fall 2013 - 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 using **Adobe Reader**, save it and email it as an attachment to **risimms@cabrillo.edu** using your regular (non-Opus) email.

Don't fill it out in your browser

Don't fill it out with MAC Preview

Please verify you actually sent a non-blank test
with complete answers 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.

Highlighted text indicates changes from the practice test (Parts 3-6 and Extra Credit). There may be some changes the instructor missed so read each question carefully.

Note to instructor:
Remove /etc/nologin (sun-Hwa)
Q10-13 trouble-T2 (sun-hwa-ii)
Q14-16 hiderocks and decoys (sun-hwa-ii)
Q33 hide treats for Homer (opus)

Part 1 - Flashcard questions (1 point each)

[Q1] What command could be used to create a new empty file?

[A1] _____

[Q2] What command can be used to search for text strings in multiple files?

[A2] _____

[Q3] How many inodes are needed for two files, one <u>symbolically</u> linked to the other?

[A3] _____

[Q4] What is the numeric permission equivalent of rwx r-x r--?

[A4] _____

[Q5] What symbol is used to pipe the standard output (stdout) of one command to the standard input (stdin) of another?

[A5] _____

Part 2 – Six steps of the shell (1 point each)

The following questions relate to the shell processing this command:

```
grep Linus /usr/share/doc/*/* 2> /dev/null | wc -l
```

[Q6] What text string is **grep** searching for?

[A6] _____

[Q7] On Opus, how many lines of **grep** output get piped into the **wc** command?

[A7] _____

[Q8] Where are **grep** error messages directed to?

[A8] _____

[Q9] Is the **grep** command, as it runs, aware that it is sending output to the **wc** command?

[A9] _____

Part 3 – Troubleshooting in Sun-Hwa-II (1 point each)

Login to Sun-Hwa-II, using your own username and your original password:
  ssh cislab\\$LOGNAME@sun-hwa-ii

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

[A10] _____

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

[A11] _____

Note: If you get stuck on Q10 and Q11 and want to pass on the two points you can contact the instructor for help.

[Q12] Was your fix a <u>permanent</u> fix on Sun-Hwa-II? (To check, log out and log back in again)

[A12] _____

[Q13] On Sun-Hwa-II, Benji needs your help. He created a games directory on Sun-Hwa-II and added some files. 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 *games* directory are full of ?'s and permission errors. He shows you the following output:

```
[CISLAB\simben90@sun-hwa-ii ~]$ ls -l games/
ls: cannot access games/glove: Permission denied
ls: cannot access games/fetch: Permission denied
ls: cannot access games/sock: Permission denied
ls: cannot access games/puppet: Permission denied
ls: cannot access games/gopher: Permission denied
ls: cannot access games/chase: Permission denied
total 0
-????????? ? ? ? ?              ? chase
-????????? ? ? ? ?              ? fetch
-????????? ? ? ? ?              ? glove
-????????? ? ? ? ?              ? gopher
-????????? ? ? ? ?              ? puppet
-????????? ? ? ? ?              ? sock
```

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

[A13] _____

Part 4 – Rock Collecting on Sun-Hwa-II (1 point each)

[Q14] On Sun-Hwa-II, 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-II, what are the permissions, in numerical format, on your sedimentary rock file?

[A15] _____

[Q16] On Sun-Hwa-II, how many files (including yours) 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 5 – George Washington's white horse section (1 point each)

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

[A17] _____

```
(·▼·)
//—\\     Part 6 – Use Opus for the following questions (1 point each)
(\_•_/)
 -- --
```

[Q18] With a single command:

a) Sort the ==words== in */home/cis90/depot/random==words==* in ==dictionary== order

b) Select the ==last six== of them

c) Email the selection to yourself and rsimms on Opus with a subject of "==Test== Q18".
What single pipeline command does all this (no ;'s)?

[A18] _____

[Q19] From your <u>home directory</u>, what single command (no ;'s) would create this this directory structure in your own home directory? To check your command, compare your output with Benji's:

```
/home/cis90/simben $ tree into
into
└── the
    └── garbage
        └── chute
            └── fly
                └── boy

5 directories, 0 files
```

[A19] _____

[Q20] From the *fly* directory, what single command (no ;'s) would populate the *boy* directory with two files named *Luke* and *Leia*? To check your command, compare your output with Benji's:

```
/home/cis90/simben $ tree into
into
└── the
    └── garbage
        └── chute
            └── fly
                └── boy
                    ├── Leia
                    └── Luke

5 directories, 2 files
```

[A20] _____

[Q21] From the *chute* directory, what command would copy both the *Leia* and *Luke* files to your *chute* directory? To check your command, compare your output with Benji's:

```
/home/cis90/simben $ tree into/
into/
└── the
    └── garbage
        └── chute
            ├── fly
            │   └── boy
            │       ├── Leia
            │       └── Luke
            ├── Leia
            └── Luke

5 directories, 4 files
```

[A21] _____

[Q22] From your _chute_ directory, what single command (no ;'s) could you use to create a file
named <mark>Motorpsycho</mark> in your _fly_ directory containing:

<mark>Well, by the dirt 'neath my nails</mark>
　　on the first line and
<mark>I guess he knew I wouldn't lie</mark>
　　on the second line?

To check your command, compare your output with Benji's:

```
/home/cis90/simben $ tree into
into
└── the
    └── garbage
        └── chute
            ├── fly
            │   ├── boy
            │   │   ├── Leia
            │   │   └── Luke
            │   └── Motorpsycho
            ├── Leia
            └── Luke

5 directories, 5 files

/home/cis90/simben $ cat into/the/garbage/chute/fly/Motorpsycho
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?

[A23] _____

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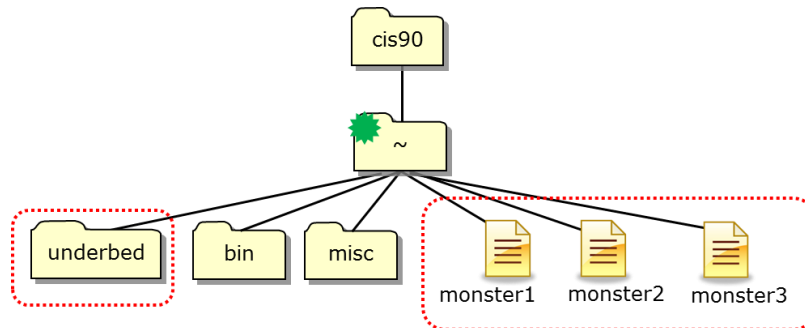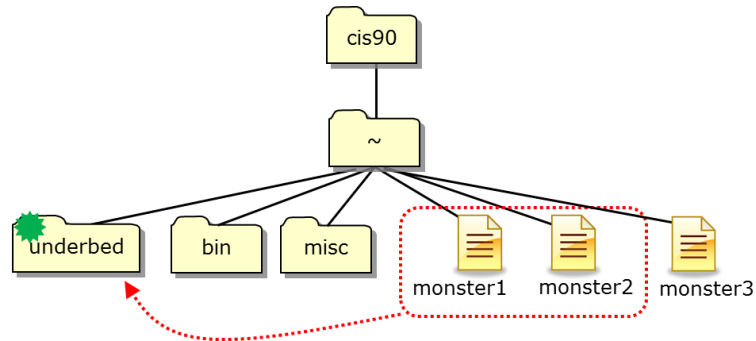

[A24] _____

[Q25] From the directory with the ✳ what single command (no ;'s) would set the permissions on just the *monster1* and *monster3* files to be read/write for the user, read only for the group and no permissions for others?
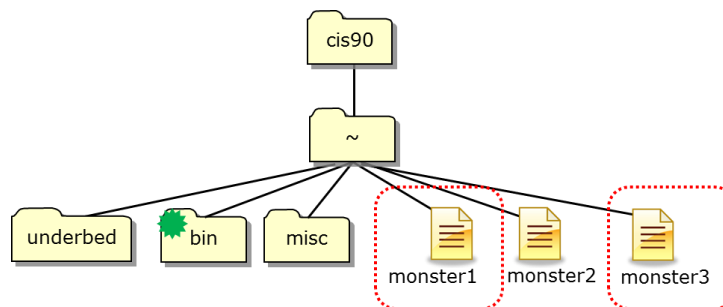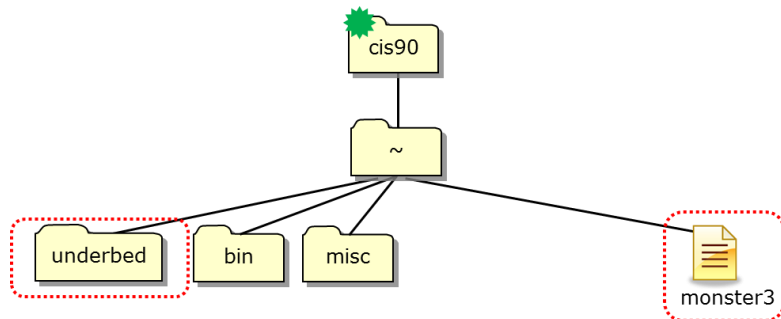

[A25] _____

[Q26] From the directory with the ✳ what command would move just *monster1* and mons*ter2* to the new *underbed* directory in your home directory?

[A26] _____

[Q27] From the directory with the ✳ what single command (no ;'s) would interactively 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
- input the math problems in *expressions*,
- append the calculated answers to the file *results*
- write any 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 527 and he copies the *torbellino* file to *torbellino.bak*, what would the permissions be, in <u>numerical</u> 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 others

[A30] _____

Extra credit (1 point each)

[Q31] On Opus, what are the permissions, in <u>numeric</u> format, on the **cgexec** command?

[A31] _____

[Q32] On Sun-Hwa-II, what pipeline could you assemble that would collect all the sedimentary rocks in */opt* used for Q14-Q16 above, extract the student first names from the file contents and output a sorted list CIS 90 student first names. Each line of the report would be a count and a name for that count.   There should be no error messages and the output should match the following EXACTLY:

```
1 Aaron
2 Andrew
1 Arthur
1 Benji
1 Brian
1 Cory
1 Daniel
3 David
1 Debbie
1 Duke
1 Edtson
1 Fidel
1 Homer
1 Humberto
1 Hunter
1 Imara
1 Ismael
1 Jessica
1 Joseph
1 Juliana
1 Lucie
1 Marc
1 Marty
1 Matt
1 Michael
1 Rochelle
1 Shawn
1 Tabitha
1 Taylor
1 Tyler
1 Will
1 Zachary
1 Zsolt
```

[A32] _____

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

why does:
find -name *treat* 2> /dev/null
only find one of the treat files even though there are more in the subdirectories

yet:
find -name *trick* 2> /dev/null
finds multiple trick files?

[A33] _____