Midterm Part 1, Answer Sheet

Stats 506, Fall 2019

Your Name: _____

Question 1. Write the value of `result` in the space below.

a. 2
b. "double"
c. 10
d. 35
e. TRUE
f. 2, 2, 2

Question 2.

a. Write the values returned in the spaces below.
   i. FALSE
   ii. TRUE
   iii. FALSE
   iv. TRUE
b. *Circle One*. If *invalid*, make a small correction that makes it valid.
   i. **Valid** | ~~Invalid~~, correction (if invalid):
   ii. **Valid** | ~~Invalid~~, correction (if invalid):
   iii. ~~Valid~~ | **Invalid**, correction (if invalid): `[.]$`
   iv. ~~Valid~~ | **Invalid**, correction (if invalid): `[^1]$`

There are other possible solutions here as well.

a. Write your call to grep here.

This question appears on the midterm extra credit and a solution will appear there after its due date.

Question 3.

a. Write the letter for the best matching description in each space.

_C_ i. echo
_G_ ii. #!/bin/bash
_H_ iii. <, >
_A_ iv. cat
_E_ v. ls
_B_ vi. cd
_D_ vii. head -n
_I_ viii. tail -n
_F_ ix. |

b. Write the appropriate command or symbol matching each `<commandX>` tag.

```
<command1> #!/bin/bash
<command2> cd
<command3> head -1
<command4> tail -1
<command5> ls "*.$ext"
<command6> >
```

Answer question 4 on the back. Submit your answer to part 2 on a separate sheet of paper.

Question 4

Write a string of dplyr commands to answer parts a-d, then describe the result of the pipe in part e.

a.
```
Orange %>%
  group_by(Tree) %>%
  summarize( n = n() )
```

b. *Okay if not a pipe here, but you should re-assign to* ***`Orange`****.*

```
Orange = Orange %>%
  mutate( age = age / 365.25, circumference = circumference / 10)
```

c.
```
Orange = Orange %>%
 group_by(age) %>%
 mutate(
   z_at_age =
 {circumference - mean(circumference)} / sd(circumference)
 )
```

d. *Can assume this is either dependent or independent of "b".* This question appears on the midterm extra credit, a solution will appear after that is due.

e. The final result has one row for each of the observation ages and columns for age, the average rate of growth since the last observation, and the standard error of that average. This allows us to compare growth rates at different points in the life-cycle of the tree.

Implicitly, we infer that the circumference was 0 at age 0.

Both part 2 questions also appear on the midterm extra credit and solutions will be provided after that is due.