All,

I have made the third exam. It will be from material in Chapters 9, 10, and the first part of 11. In particular, the exam will include the following types of questions …

1) 10 multiple choice questions that are primarily based on definitions, symbols, etc.
2) 3 (out of 5 choices) short answer questions.
3) A calculation question like the last question on the Chapter 9 HW (will use `distrib()`).
4) Compute a p-value and a confidence region like we did in class exercises (will use `distrib()` and some calculator work).
5) Two questions like the Chapter 10 HW. On one you will be required to use `z.test()`, go to the class webpage to get a data file (`Shoshoni.txt`) and read this into R (you should save this file to your T:/ drive and then bring a script to the exam that changes the working directory to where you saved it, uses `read.table()` to load the data into R, and use `str()` to view a structure of the data). The other questions will use `distrib()` and some calculator work.

The following information will be provided on the exam.

11 Steps for any Significance Test
1. **[1]** state the rejection criterion (α),
2. **[2]** state the null and alternative hypotheses to be tested and define the parameter(s),
3. **[1]** determine which hypothesis test to use – thoroughly explain why,
4. **[1]** collect the data (address type of study and randomization),
5. **[2]** check all necessary assumptions (explain how you tested the validity),
6. **[1]** calculate the appropriate statistic(s),
7. **[2]** calculate the appropriate test statistic,
8. **[2]** calculate the p-value,
9. **[1]** state the rejection decision,
10. **[2]** summarize your findings in terms of the problem, and
11. **[2] if reject H$_0$,** compute a **100(1-α)%** *confidence region* for the parameter.

In addition, I will provide the following information about R.

`distrib(x,mean=##,sd=##,lower.tail=XXXXX,type="X")`

```
where x is replaced by the value of the quantitative variable or the area

      mean=## has ## replaced by the value of the mean

      sd=## had ## replaced by the value of the standard deviation/error

      lower.tail=XXXXX has XXXXX replaced with TRUE (the default) for a
         "left-of" and FALSE for a "right-of" calculation

      type="X" has X replaced with p (the default) for a forward and q for
         a reverse question
```

`sqrt(x)`

   where x is replaced by a quantitative value

`( z1 <- z.test(df$var,sd=##,mu=##,alt="XXX",sd=##,conf.level=0.##) )`

   where df$var has df replaced by the name of the data frame and var
         replaced by the name of the quantitative variable

        mu=## has ## replaced by the null hypothesized mean

        sd=## has ## replaced by the value of σ

        alt="XXX" has "XXX" replaced by "less", "greater", or "two.sided"

        conf.level=0.## has ## replaced by the level of confidence

As per usual, you should bring a calculator, you should write your exam in pencil and not in ink, there will be multiple versions of the exam, and you will have to print the R code that you used.

Let me know if you have any questions.