Here are the commands for doing a one sample test of the mean using a t distribution.

```
t.test (cngordon$WT, mu = 170, alternative = “less”, conf.level = .90);
t.test (cngordon$WT, mu = 170, alternative = “two.sided”, conf.level = .90);
t.test (cngordon$WT, mu = 170, alternative = “greater”, conf.level = .90);
```

#Note the differences ...each command runs a test based on the alternative hypothesis K against the common null hypothesis H (μ = 170lb). For a regular confidence interval (CI), rerun the test with the two.sided alternative.

#As with all quotation marks in R, be careful when you copy/paste commands in, as the quotations will not come in as the “official, R approved” quotations, thereby causing a glitch. If this happens, just delete and retype the quotation marks in R, and that should solve the problem.

#Also, it is up to the user to confirm that the conditions are met for the chosen distribution. Simply running the test in R does not ensure that the appropriate distribution is in use.

#For a two sample test of the mean using a t distribution, use the following command. The default null hypothesis (H) is that the difference in means = 0. The alternatives are given as in the one sample t test.

```
t.test(cngordon$WT ~ cngordon$SP, alternative = “greater”, conf.level = .9);
```

#Note that a) the subcommands are similar to those for a one sample t test, and b) the “~” means “described with”. For a t test using two separate data sets use …

```
t.test(cngordon$WT, vtgordon$WT, alternative = “two.sided”, conf.level = .9);
```

#Again, for a regular confidence interval (CI), rerun the test with the two.sided alternative.

#The following code is for the one sample proportion test using the Chisq distribution with 225 successes and 512 trials. Here, H: π = .5, and K is defined with commands as above.

```
prop.test (225, 512, p = .5, alternative = “less”, conf.level = .90);
prop.test (225, 512, p = .5, alternative = “two.sided”, conf.level = .90);
prop.test (225, 512, p = .5, alternative = “greater”, conf.level = .90);
```

#Again, For a regular confidence interval (CI), rerun the test with the two.sided alternative.

#The following code is for the two sample proportion test using the Chisq distribution with 225 successes and 512 trials. Here, H: π = .5, and K is defined with commands as above.

```
prop.test (c(30, 20), c(50, 80), alternative = “less”, conf.level = .90);
prop.test (c(30, 20), c(50, 80), alternative = “two.sided”, conf.level = .90);
prop.test (c(30, 20), c(50, 80), alternative = “greater”, conf.level = .90);
```

#Here the successes are given in the first concatenation, and the trials are given in the second. So for this test we have 30 out of 50 for the first sample and 20 out of 80 for the second. The default null hypothesis (H) is that the difference in proportions = 0. Again, For a regular confidence interval (CI), rerun the test with the two.sided alternative.

#Note that for the proportion tests, you do not need to specify a data set … just use the numbers given.

#A fairly complete ANOVA can be run with these commands.

```
boxplot (cngordon$WT ~ cngordon$PSN);
tapply (cngordon$WT ~ cngordon$PSN, sd);
anova (lm(cngordon$WT ~ cngordon$PSN));
```

```
#A fairly comprehensive Simple Linear Regression can be run with these commands.
cor (BBgordon$BA, BBgordon$R);
plot (BBgordon$BA, BBgordon$R);
anova (lm(BBgordon$R ~ BBgordon$BA));
summary(lm(BBgordon$R~ BBgordon$BA));
BBgordonReg <- lm(BBgordon$R ~ BBgordon$BA);
Plot (BBgordon$BA,BBgordonReg$residuals);
boxplot (BBgordonReg$residuals);
```