STAT 217: Quiz 21

```
cricket <- read.csv("~/Documents/Stat217Fall2014/quizzes/Quiz21/slr02.csv"
                            ,head=T)
```

```
lm.chirp <- lm(chirps~temp, data=cricket)
summary(lm.chirp)

##
## Call:
## lm(formula = chirps ~ temp, data = cricket)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -1.5601 -0.5793  0.0313  0.5902  1.5326
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  -0.3091     3.1086   -0.10  0.92230
## temp          0.2119     0.0387    5.47  0.00011
##
## Residual standard error: 0.972 on 13 degrees of freedom
## Multiple R-squared:  0.697,Adjusted R-squared:  0.674
## F-statistic:   30 on 1 and 13 DF,  p-value: 0.000107
```

1. Write the hypotheses being tested in the intercept row.

2. Write the hypotheses being tested in the temp row.

```
confint(lm.chirp)

##                2.5 % 97.5 %
## (Intercept) -7.025  6.407
## temp         0.128  0.296
```

3. Write an "It is estimated" statement for the slope coefficient in the table above. Use the 95% confidence interval given.

```r
predict(lm.chirp,interval="confidence", level=0.95)
```

```
##     fit  lwr  upr
## 1  18.5 17.6 19.4
## 2  14.9 14.0 15.8
## 3  19.5 18.2 20.7
## 4  17.6 16.9 18.2
## 5  16.8 16.2 17.3
## 6  15.6 15.0 16.3
## 7  14.5 13.4 15.5
## 8  17.1 16.5 17.6
## 9  14.4 13.4 15.4
## 10 17.3 16.7 18.0
## 11 16.6 16.0 17.1
## 12 17.2 16.6 17.8
## 13 16.8 16.2 17.3
## 14 17.4 16.8 18.0
## 15 15.9 15.2 16.5
```

4. Interpret the confidence interval in row 6 above.

```r
predict(lm.chirp,interval="prediction", level=0.95)
```

```
## Warning:  predictions on current data refer to _future_ responses
```

```
##     fit  lwr  upr
## 1  18.5 16.2 20.8
## 2  14.9 12.6 17.1
## 3  19.5 17.0 21.9
## 4  17.6 15.4 19.8
## 5  16.8 14.6 18.9
## 6  15.6 13.4 17.8
## 7  14.5 12.1 16.8
## 8  17.1 14.9 19.2
## 9  14.4 12.1 16.7
## 10 17.3 15.2 19.5
## 11 16.6 14.4 18.7
## 12 17.2 15.0 19.4
## 13 16.8 14.6 18.9
## 14 17.4 15.2 19.6
## 15 15.9 13.7 18.1
```

5. Interpret the prediction interval in row 6 above.