205615894_stats101A_hw1

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(a)

NULL Hypothesis: mu = 225 hours (The mean repair time is 225 hours)

Althernative Hypothesis: mu > 225 hours (The mean repair time exceeds 225 hours)

(b)

```
repair <- c(159, 280, 101, 212, 224, 379, 179, 264, 222, 362, 168, 250, 149, 260, 485
, 170)

t.test(repair - 225, alternative = "greater")
```

```
##
##  One Sample t-test
##
## data:  repair - 225
## t = 0.66852, df = 15, p-value = 0.257
## alternative hypothesis: true mean is greater than 0
## 95 percent confidence interval:
##  -26.76786       Inf
## sample estimates:
## mean of x
##      16.5
```

Since the p-value is greater than the significance level of 0.05, we fail to reject the null hypothesis. There is no significance evidence thatthe mean repair time exceeds 225 hours

(c)

```
t.test(repair - 225, alternative = "greater")
```

```
##
##  One Sample t-test
##
## data:  repair - 225
## t = 0.66852, df = 15, p-value = 0.257
## alternative hypothesis: true mean is greater than 0
## 95 percent confidence interval:
##  -26.76786       Inf
## sample estimates:
## mean of x
##      16.5
```

The P-value for the test is 0.257.

###(d)

```
t.test(repair - 225)
```

```
##
##  One Sample t-test
##
## data:  repair - 225
## t = 0.66852, df = 15, p-value = 0.514
## alternative hypothesis: true mean is not equal to 0
## 95 percent confidence interval:
##  -36.10731  69.10731
## sample estimates:
## mean of x
##      16.5
```

```
lowerv <- 225 - 36.107031
upperv <- 225 + 69.10731
confidenceinterval <- c(lowerv, upperv)
confidenceinterval
```

```
## [1] 188.8930 294.1073
```

The 95 percent confidence interval on the mean repair time is 188.892969, 294.10731. We are 95 percent confident that the mean repair time for the specific electronic instrument is between 188.8930 hours and 294.1073 hours.