

STAT 120 Group Activity

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1.a The parameter of interest would be the proportions of car that are ineffective.

$H_0 : p_{mf} = 0.1$ verses $H_a : p_{mf} > 0.1$

1.b $\hat{p} = 0.125$

1.c

Type I: They recall all cars even though there is less or equal to ten percent of cars experiencing malfunctions

Type II: They do not recall the cars even though there is more than ten percent of cars experienncing malfunctions

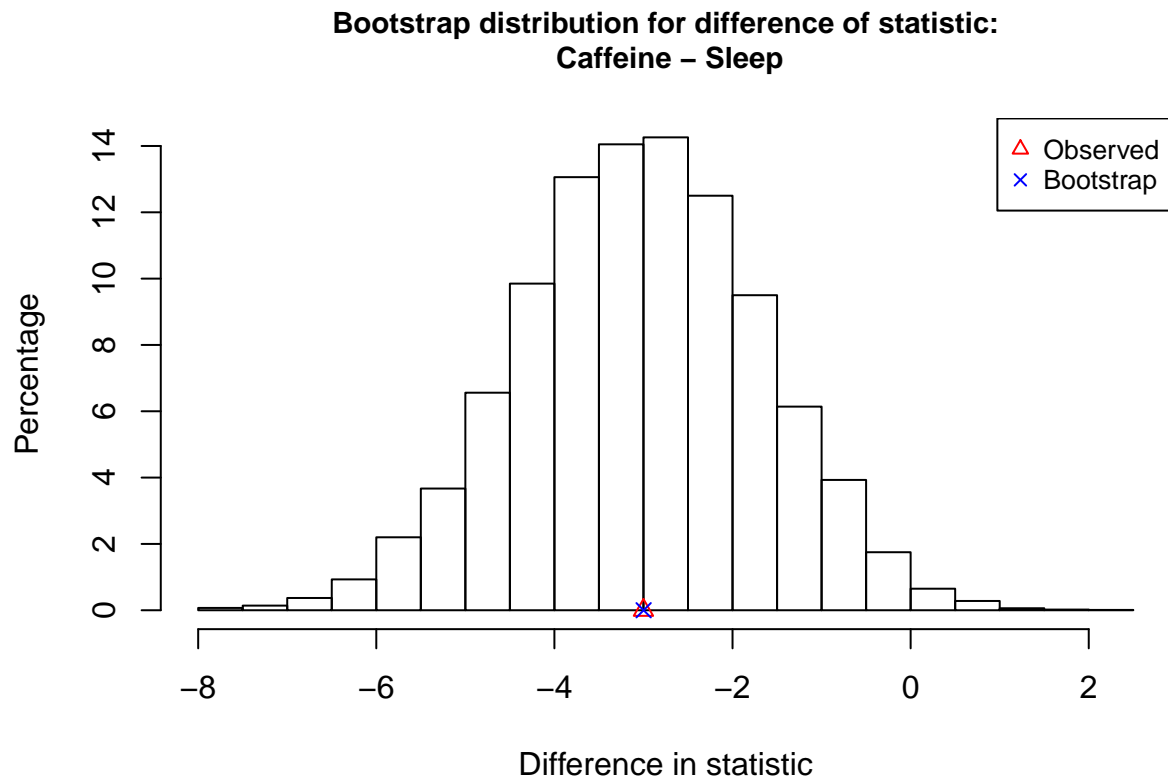
1.d Yes; do not have enough information to draw a conclusion

2.a No; $H_0 : \mu = 10$ verses $H_a : \mu < 10$; $z = -1.43$; $p = 0.076$; we can not be 95% confident in that the average honey production is less than 10 lbs.

2.b 8 plus or minus 6.6402

3.a

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##
## ** Bootstrap interval for difference of statistic
##
## Observed difference of statistic: Caffeine - Sleep = -3
## Mean of bootstrap distribution: -2.9981
## Standard error of bootstrap distribution: 1.35497
##
## Bootstrap percentile interval
##      5%    95%
## -5.25 -0.75
##
##      *-----*
```



We can be 90% sure that the mean difference between the caffeine and sleeping groups is between -5.25 and -0.833.

3.b -3 plus minus 7.055632

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## [1] -7.055632
```