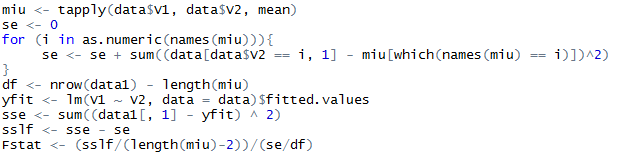
**Homework 6**

UNI: qy2205 Eric Yuan

**3.14**

**(a)**

Since , so the conclusion is .



C:\Users\ADMINI~1\AppData\Local\Temp\WeChat Files\9a1c220fda4ae4dcf00729358e05276.png

C:\Users\ADMINI~1\AppData\Local\Temp\WeChat Files\aa0edd310ca7d94116263ffaf609252.png

**(b)**

There is no substantial advantage or disadvantage.

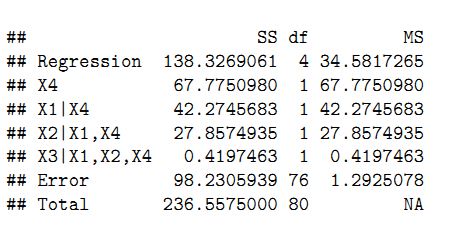
**(c)**

The test indicate that the linear regression line is invalid and transformation to data may generate better results.

**7.7**

**(a)**



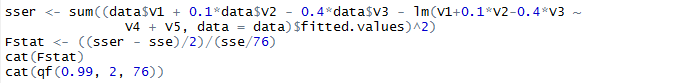


**(b)**

Since , so the conclusion is .

C:\Users\ADMINI~1\AppData\Local\Temp\WeChat Files\55abd9dae3357f4daad88845d80838d.png

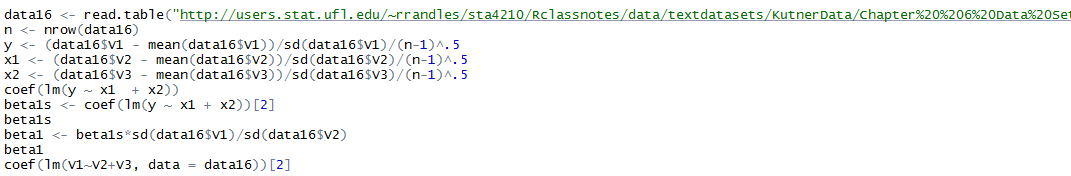
**7.10**

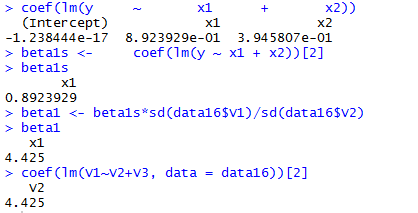


Based on the calculation result, we can conclude

**7.16**

**(a)**

****



**(b)**

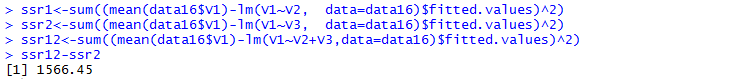
When increase 1-unit, will increase 0.892 if is constant.

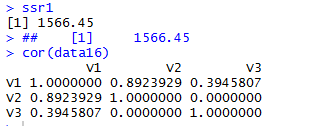
**(c)**

Yes, they are the same.

**7.24**

C:\Users\ADMINI~1\AppData\Local\Temp\WeChat Files\17bf60e19ebff3497d2fe9e938cb1da.png





The fitted line is:

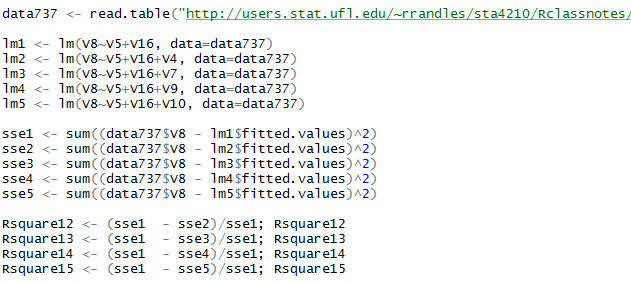
The coefficient of first order regression function with Y is the same as the coefficient obtained before. So, they are the same.

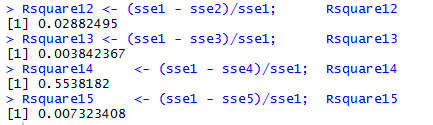
Yes,

It shows that are independent.

**7.37**

**(a)**

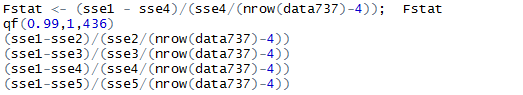


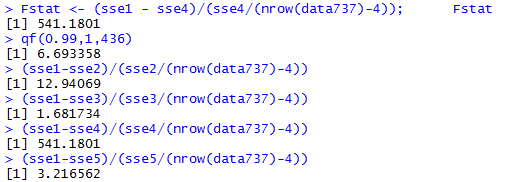


**(b)**

Number of hospital beds is the best one, It has the largest coeﬃcients of partial determination.

**(c)**





So, we conclude , is helpful to the model.

No, F-statistics for other three variables are not as large as it for number of hospita beds since their coeﬃcients of partial determination are smaller.