

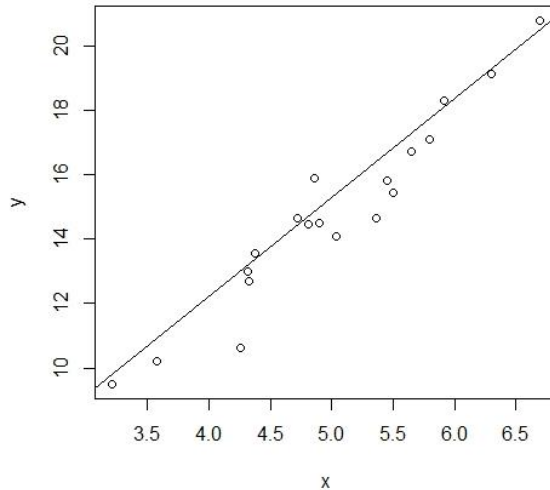
# Homework 4

Song Jiecheng 13300180032

Question 1 : Do linear regression to simplelr1.csv and do inference to the coefficients ,  $x$  is independent variable and  $y$  is dependent variable.

	$\beta_0$	$\beta_1$
Result	-0.9540925	3.1561384
Inference( $\beta = 0$ )	True	False
$T(\beta = 0)$	-0.8775921	14.68775
$(\alpha = 5\%)$		

graph



Question 2 : Do linear regression to lr2.csv and do inference to the coefficients ,  $x$  is independent variable and  $y$  is dependent variable.

	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$	$\beta_4$
Result	1.3050691	1.8833781	2.8539523	0.6671587	-0.1968839
Infer( $\beta = 0$ )	False	False	False	False	True
F( $\beta = 0$ )	13.30278	136.3436	133.4716	5.443898	0.6356135
	$\beta_0, \beta_1$	$\beta_0, \beta_2$	$\beta_0, \beta_3$	$\beta_0, \beta_4$	$\beta_1, \beta_2$
Infer( $\beta = 0$ )	False	False	False	False	False
F( $\beta = 0$ )	115.0455	103.7288	8.635882	5.347855	234.6983
	$\beta_1, \beta_3$	$\beta_1, \beta_4$	$\beta_2, \beta_3$	$\beta_2, \beta_4$	$\beta_3, \beta_4$
Infer( $\beta = 0$ )	False	False	False	False	True
F( $\beta = 0$ )	67.56143	62.94181	71.34856	62.8927	3.08184
	$\beta_0, \beta_1, \beta_2$	$\beta_0, \beta_1, \beta_3$	$\beta_0, \beta_1, \beta_4$	$\beta_0, \beta_2, \beta_3$	$\beta_0, \beta_2, \beta_4$
Infer( $\beta = 0$ )	False	False	False	False	False
F( $\beta = 0$ )	207.9424	75.79842	72.12942	71.73604	65.50954
	$\beta_0, \beta_3, \beta_4$	$\beta_1, \beta_2, \beta_3$	$\beta_1, \beta_2, \beta_4$	$\beta_1, \beta_3, \beta_4$	$\beta_2, \beta_3, \beta_4$
Infer( $\beta = 0$ )	False	False	False	False	False
F( $\beta = 0$ )	4.91629	157.3192	150.205	41.58236	45.03168
	$\beta_1, \beta_2, \beta_3, \beta_4$	$\beta_0, \beta_2, \beta_3, \beta_4$	$\beta_0, \beta_1, \beta_3, \beta_4$	$\beta_0, \beta_1, \beta_2, \beta_4$	$\beta_0, \beta_1, \beta_2, \beta_3$
Infer( $\beta = 0$ )	False	False	False	False	False
F( $\beta = 0$ )	113.315	51.09084	53.4442	150.4507	156.2283

( $\alpha = 5\%$ )