

# Computing Assignment VIII

YEP

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## Testing for the ratio of coefficients

co_X1	co_X2	ratio	W_test	wtest_cval	wtest2_cval
0.4548874	1.0269328	0.4429573	1.1389667	6.225133	3.512693
0.2919692	0.9901984	0.2948593	0.0178208	2.951925	3.186082
0.5101963	0.9946487	0.5129412	1.8369105	9.766138	4.428994
0.1588872	1.2871034	0.1234455	0.5882972	6.605766	4.026018
0.3590474	0.9395023	0.3821676	0.4409674	6.286400	3.988643
0.3694199	0.8027965	0.4601663	1.2416866	8.592368	5.109418
0.2653978	1.0521749	0.2522373	0.0213815	5.644022	6.306342
0.1161518	1.1944117	0.0972460	1.0783649	7.246293	2.873681
0.3435437	1.0502128	0.3271182	0.0983111	6.422090	5.235777
0.3547203	1.0306355	0.3441763	0.2685397	5.621615	3.586303

1. Variance: exact, asymptotic, bootstrap

```
## [1] 0.03144295
```

```
## [1] 0.02458818
```

```
## [1] 0.03166799
```

## Cross-validation

1. Dimension, class

```
## [1] 100 3
```

```
## [1] "tbl_df"      "tbl"        "data.frame"
```

2. Results

model	mse	mean
reg1	mse_in	1.198144
reg1	mse_out	1.249883
reg2	mse_in	1.163637
reg2	mse_out	1.241117

3. Full data

```
##
```

```
## Call:
```

```
## lm(formula = y ~ x1, data = data_df)
```

```
##
```

```
## Residuals:
```

```
##      Min       1Q   Median       3Q      Max
```

```
## -2.61944 -0.81057  0.07921  0.79001  2.68909
```

```
##
## Coefficients:
##           Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.2145     0.1107  10.973  <2e-16 ***
## x1           0.2032     0.1092   1.861   0.0658 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.106 on 98 degrees of freedom
## Multiple R-squared:  0.03412,    Adjusted R-squared:  0.02427
## F-statistic: 3.462 on 1 and 98 DF,  p-value: 0.06579

##
## Call:
## lm(formula = y ~ x1 + x2, data = data_df)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -2.61797 -0.89390  0.05385  0.72291  2.60344
##
## Coefficients:
##           Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.19273     0.11041  10.803  <2e-16 ***
## x1           0.09846     0.12465   0.790   0.4315
## x2           0.21217     0.12535   1.693   0.0937 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.095 on 97 degrees of freedom
## Multiple R-squared:  0.06183,    Adjusted R-squared:  0.04249
## F-statistic: 3.196 on 2 and 97 DF,  p-value: 0.04525
```