Econometrics_Problem_Set_5.R

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```
library(readstata13)
```

```
## Warning: package 'readstata13' was built under R version 3.4.4
```

```
caschool <- read.dta13("caschool.dta")

firstlm <- lm(data = caschool, testscr ~ str + el_pct + calw_pct + meal_pct)
summary(firstlm)
```

```
##
## Call:
## lm(formula = testscr ~ str + el_pct + calw_pct + meal_pct, data = caschool)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -32.179  -5.239  -0.185   5.171  31.308
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) 700.39184    4.69797 149.084  < 2e-16 ***
## str          -1.01435    0.23974  -4.231 2.86e-05 ***
## el_pct       -0.12982    0.03400  -3.819 0.000155 ***
## calw_pct     -0.04785    0.06097  -0.785 0.432974
## meal_pct     -0.52862    0.03219 -16.422  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 9.084 on 415 degrees of freedom
## Multiple R-squared:  0.7749, Adjusted R-squared:  0.7727
## F-statistic: 357.1 on 4 and 415 DF,  p-value: < 2.2e-16
```

```
secondlm <- lm(data = caschool, testscr ~ str + el_pct + meal_pct)
summary(secondlm)
```

```
##
## Call:
## lm(formula = testscr ~ str + el_pct + meal_pct, data = caschool)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -32.849  -5.151  -0.308   5.243  31.501
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) 700.14996    4.68569 149.423  < 2e-16 ***
## str          -0.99831    0.23875  -4.181 3.54e-05 ***
## el_pct       -0.12157    0.03232  -3.762 0.000193 ***
## meal_pct     -0.54735    0.02160 -25.341  < 2e-16 ***
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 9.08 on 416 degrees of freedom
## Multiple R-squared:  0.7745, Adjusted R-squared:  0.7729
## F-statistic: 476.3 on 3 and 416 DF,  p-value: < 2.2e-16
```

```
caschool$two_meal <- 2*caschool$meal_pct

thirdlm <- lm(data = caschool, testscr ~ str + el_pct + two_meal)
summary(thirdlm)
```

```
##
## Call:
## lm(formula = testscr ~ str + el_pct + two_meal, data = caschool)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -32.849  -5.151  -0.308   5.243  31.501
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) 700.14996    4.68569 149.423  < 2e-16 ***
## str          -0.99831    0.23875  -4.181 3.54e-05 ***
## el_pct       -0.12157    0.03232  -3.762 0.000193 ***
## two_meal     -0.27367    0.01080 -25.341  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 9.08 on 416 degrees of freedom
## Multiple R-squared:  0.7745, Adjusted R-squared:  0.7729
## F-statistic: 476.3 on 3 and 416 DF,  p-value: < 2.2e-16
```

```
fourthlm <- lm(data = caschool, testscr ~ str + el_pct + two_meal + meal_pct)
summary(fourthlm)
```

```
##
## Call:
## lm(formula = testscr ~ str + el_pct + two_meal + meal_pct, data = caschool)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -32.849  -5.151  -0.308   5.243  31.501
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) 700.14996    4.68569 149.423  < 2e-16 ***
## str          -0.99831    0.23875  -4.181 3.54e-05 ***
## el_pct       -0.12157    0.03232  -3.762 0.000193 ***
## two_meal     -0.27367    0.01080 -25.341  < 2e-16 ***
## meal_pct           NA         NA      NA       NA
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 9.08 on 416 degrees of freedom
## Multiple R-squared:  0.7745, Adjusted R-squared:  0.7729
```

```
## F-statistic: 476.3 on 3 and 416 DF,  p-value: < 2.2e-16
```