```
 1 .
 2 . clear

 3 . set more off

 4 . cd "C:\Users\wonja\Documents\GitHub\14.320\PS3"
   C:\Users\wonja\Documents\GitHub\14.320\PS3

 5 . use STAR_public_use

 6 .
 7 . * Problem 2.(a) i.
 8 .
 9 . local all_treatments = "ssp sfp sfsp"

10 . foreach treatment in `all_treatments' {
   2.     ttest grade_20059_fall if control == 1 | `treatment' == 1, by(control)
   3.         eststo: quietly estpost ttest grade_20059_fall if control == 1 | `
> treatment' == 1, by(control)
   4. }

Two-sample t test with equal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |     212    64.13365    .8680953    12.63966     62.4224     65.8449
       1 |     854    63.85714    .4120091    12.04026    63.04847    64.66581
---------+--------------------------------------------------------------------
combined |   1,066    63.91213    .3723244    12.15626    63.18156    64.64271
---------+--------------------------------------------------------------------
    diff |             .276505    .9331853               -1.554587    2.107597
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =   0.2963
Ho: diff = 0                                     degrees of freedom =     1064

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.6165         Pr(|T| > |t|) = 0.7671          Pr(T > t) = 0.3835
(est1 stored)

Two-sample t test with equal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |     219    65.83067    .7538433    11.15586    64.34492    67.31642
       1 |     854    63.85714    .4120091    12.04026    63.04847    64.66581
---------+--------------------------------------------------------------------
combined |   1,073    64.25994    .3628792    11.88672    63.54791    64.97198
---------+--------------------------------------------------------------------
    diff |            1.973527    .8987481                .2100199    3.737034
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =   2.1959
Ho: diff = 0                                     degrees of freedom =     1071

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.9858         Pr(|T| > |t|) = 0.0283          Pr(T > t) = 0.0142
(est2 stored)

Two-sample t test with equal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |     119     66.0979    .9801826    10.69253    64.15687    68.03893
       1 |     854    63.85714    .4120091    12.04026    63.04847    64.66581
---------+--------------------------------------------------------------------
combined |     973    64.13119    .3815353    11.90121    63.38246    64.87992
---------+--------------------------------------------------------------------
    diff |            2.240756    1.162893               -.0413174     4.52283
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =   1.9269
Ho: diff = 0                                     degrees of freedom =      971
```

```
    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.9729         Pr(|T| > |t|) = 0.0543          Pr(T > t) = 0.0271
(est3 stored)

11 . esttab using PS3-2ai.tex, replace compress cells("b(label(diff) fmt(a3) star)
>  t(fmt(a3))" se(par fmt(a3))) label nonumber mtitles(`all_treatments') stats(
> N, fmt(%9.0gc) label(Observations)) addnote("standard errors in parentheses"
> "@starlegend")
(output written to PS3-2ai.tex)

12 . eststo clear

13 .
14 . * Problem 2.(a) i.
15 .
16 . gen treat = 1 - control

17 . foreach treatment in `all_treatments' {
  2.     eststo: reg grade_20059_fall treat if treat == 0 | `treatment' == 1
  3. }

      Source |       SS           df       MS      Number of obs   =     1,066
-------------+----------------------------------   F(1, 1064)      =      0.09
       Model |  12.9850142         1  12.9850142   Prob > F        =    0.7671
    Residual |  157367.082     1,064  147.901393   R-squared       =    0.0001
-------------+----------------------------------   Adj R-squared   =   -0.0009
       Total |  157380.067     1,065  147.774711   Root MSE        =    12.161

------------------------------------------------------------------------------
grade_2005~l |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       treat |    .276505   .9331853     0.30   0.767    -1.554587    2.107597
       _cons |   63.85714    .416157   153.44   0.000     63.04056    64.67372
------------------------------------------------------------------------------
(est1 stored)

      Source |       SS           df       MS      Number of obs   =     1,073
-------------+----------------------------------   F(1, 1071)      =      4.82
       Model |  678.872694         1  678.872694   Prob > F        =    0.0283
    Residual |  150788.333     1,071  140.792094   R-squared       =    0.0045
-------------+----------------------------------   Adj R-squared   =    0.0036
       Total |  151467.205     1,072  141.294035   Root MSE        =    11.866

------------------------------------------------------------------------------
grade_2005~l |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       treat |   1.973527   .8987481     2.20   0.028     .2100199    3.737034
       _cons |   63.85714   .4060319   157.27   0.000     63.06043    64.65385
------------------------------------------------------------------------------
(est2 stored)

      Source |       SS           df       MS      Number of obs   =       973
-------------+----------------------------------   F(1, 971)       =      3.71
       Model |  524.422422         1  524.422422   Prob > F        =    0.0543
    Residual |  137148.484       971  141.244577   R-squared       =    0.0038
-------------+----------------------------------   Adj R-squared   =    0.0028
       Total |  137672.907       972  141.638793   Root MSE        =    11.885

------------------------------------------------------------------------------
grade_2005~l |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       treat |   2.240756   1.162893     1.93   0.054    -.0413174     4.52283
       _cons |   63.85714   .4066839   157.02   0.000     63.05906    64.65522
------------------------------------------------------------------------------
(est3 stored)
```

```
18 . esttab using PS3-2aii.tex, replace compress gaps cells("b(label(coef) fmt(a3)
   >  star) t(fmt(a3))" se(par fmt(a3))) label nonumber varlabels(treat "Fall grad
   > e" _cons "Constant") mtitles(`all_treatments') stats(N, fmt(%9.0gc) label(Obs
   > ervations)) addnote("standard errors in parentheses" "@starlegend")
   (output written to PS3-2aii.tex)

19 . eststo clear

20 .
21 . * Problem 2.(b) i.
22 .
23 . eststo: reg grade_20059_fall `all_treatments'

      Source |       SS           df       MS      Number of obs   =     1,404
-------------+----------------------------------   F(3, 1400)      =      2.49
       Model |  1058.00605         3  352.668683   Prob > F        =    0.0585
    Residual |  197988.856     1,400  141.420611   R-squared       =    0.0053
-------------+----------------------------------   Adj R-squared   =    0.0032
       Total |  199046.862     1,403  141.872318   Root MSE        =    11.892

------------------------------------------------------------------------------
grade_2005~l |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         ssp |    .276505    .912511     0.30   0.762    -1.513531    2.066541
         sfp |   1.973527    .900752     2.19   0.029     .2065578    3.740496
        sfsp |   2.240756   1.163618     1.93   0.054    -.0418661    4.523379
       _cons |   63.85714   .4069372   156.92   0.000     63.05887    64.65542
------------------------------------------------------------------------------
   (est1 stored)

24 . esttab using PS3-2bi.tex, replace compress label nonumber stats(N, fmt(%9.0gc
   > ) label(Observations))
   (output written to PS3-2bi.tex)

25 . eststo clear

26 .
27 . * Problem 2.(c)
28 .
29 . gen sfp_sfsp = 0

30 . replace sfp_sfsp = 1 if sfp == 1 | sfsp == 1
   (400 real changes made)

31 . eststo: reg grade_20059_fall ssp sfp_sfsp

      Source |       SS           df       MS      Number of obs   =     1,404
-------------+----------------------------------   F(2, 1401)      =      3.72
       Model |  1052.49996         2  526.24998   Prob > F        =    0.0244
    Residual |  197994.362     1,401  141.323599   R-squared       =    0.0053
-------------+----------------------------------   Adj R-squared   =    0.0039
       Total |  199046.862     1,403  141.872318   Root MSE        =    11.888

------------------------------------------------------------------------------
grade_2005~l |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         ssp |    .276505   .9121979     0.30   0.762    -1.512916    2.065926
     sfp_sfsp |   2.067611   .7639381     2.71   0.007     .5690247    3.566196
       _cons |   63.85714   .4067976   156.98   0.000     63.05914    64.65514
------------------------------------------------------------------------------
   (est1 stored)
```

```
32 . esttab using PS3-2c.tex, replace compress label nonumber varlabels(sfp_sfsp "
   > Offered sfp or sfsp" _cons "Constant") stats(N, fmt(%9.0gc) label(Observation
   > s))
   (output written to PS3-2c.tex)

33 . eststo clear

34 .
35 . * Problem 2.(d)
36 .
37 . eststo: reg grade_20059_fall ssp sfp_sfsp female gpa0 dad2 mom2

      Source |       SS           df       MS      Number of obs   =     1,278
-------------+----------------------------------   F(6, 1271)      =     21.43
       Model |  16456.4289         6  2742.73814   Prob > F        =    0.0000
    Residual |  162652.411     1,271  127.971999   R-squared       =    0.0919
-------------+----------------------------------   Adj R-squared   =    0.0876
       Total |   179108.84     1,277   140.25751   Root MSE        =    11.312

------------------------------------------------------------------------------
grade_2005~l |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         ssp |   .1821301   .9143386     0.20   0.842    -1.611649    1.975909
    sfp_sfsp |   2.132299    .766642     2.78   0.005     .6282759    3.636322
      female |  -2.095959   .6447654    -3.25   0.001    -3.360881    -.831038
        gpa0 |   .7812122   .0745982    10.47   0.000     .6348631    .9275614
        dad2 |   .7483422   .7047745     1.06   0.289    -.6343071    2.130991
        mom2 |  -.7034552    .730616    -0.96   0.336    -2.136801    .7298907
       _cons |   3.543017   5.870677     0.60   0.546    -7.974267     15.0603
------------------------------------------------------------------------------
   (est1 stored)

38 . esttab using PS3-2d.tex, replace compress label nonumber varlabels(sfp_sfsp "
   > Offered sfp or sfsp" female "Female" _cons "Constant") stats(N, fmt(%9.0gc) l
   > abel(Observations))
   (output written to PS3-2d.tex)

39 . eststo clear

40 .
41 . log close
       name:  <unnamed>
        log:  C:\Users\wonja\Documents\GitHub\14.320\PS3\PS3-2.smcl
   log type:  smcl
  closed on:  28 Mar 2021, 14:00:59
```