```
 1 .
 2 . * Answer II.1.(a)
 3 .
 4 . import delimited "ps4_data.csv"
   (6 vars, 14,493 obs)

 5 . gen potex0 = age - years_ed - 6

 6 . sum potex0
```

Variable	Obs	Mean	Std. Dev.	Min	Max
potex0	**14,493**	**17.13672**	**7.547176**	**-3**	**42**

```
 7 . gen potex1 = potex0

 8 . replace potex1 = 0 if potex1 < 0
   (4 real changes made)

 9 . sum potex1
```

Variable	Obs	Mean	Std. Dev.	Min	Max
potex1	**14,493**	**17.13714**	**7.546181**	**0**	**42**

```
10 . qui estpost sum potex0 potex1

11 . esttab using PS4-21a.tex, replace compress ///
   >         cells("count(fmt(%9.0gc)) mean(fmt(3)) sd(fmt(3)) min max") ///
   >         varlabels(potex0 "Potential Experience (Initial)" potex1 "Potential E
   > xperience (Cleaned)") ///
   >         collabels(Obs Mean "Std. Dev." Min Max) ///
   >         nomtitles ///
   >         nonumbers ///
   >         noobs
   (output written to PS4-21a.tex)

12 .
13 . * Answer II.1.(b)
14 .
15 . drop if sex == 2
   (6,955 observations deleted)

16 . gen potex2 = potex1^2

17 . eststo: reg ln_uwe potex1 potex2 years_ed
```

Source	SS	df	MS		
Model	**711.761281**	**3**	**237.25376**	Number of obs	= **7,538**
Residual	**3294.97461**	**7,534**	**.437347307**	F(3, 7534)	= **542.48**
Total	**4006.73589**	**7,537**	**.531608849**	Prob > F	= **0.0000**
				R-squared	= **0.1776**
				Adj R-squared	= **0.1773**
				Root MSE	= **.66132**

ln_uwe	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
potex1	**.0474122**	**.0044039**	**10.77**	**0.000**	**.0387792**	**.0560451**
potex2	**-.0007614**	**.0001189**	**-6.41**	**0.000**	**-.0009945**	**-.0005284**
years_ed	**.1066103**	**.0027483**	**38.79**	**0.000**	**.1012229**	**.1119977**
_cons	**4.211476**	**.0548033**	**76.85**	**0.000**	**4.104046**	**4.318906**

(**est1** stored)

```
18 . eststo: reg ln_uwe potex1 potex2 years_ed, r

Linear regression                               Number of obs     =      7,538
                                                F(3, 7534)        =     512.29
                                                Prob > F          =     0.0000
                                                R-squared         =     0.1776
                                                Root MSE          =     .66132

------------------------------------------------------------------------------
             |               Robust
      ln_uwe |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      potex1 |   .0474122   .0044222    10.72   0.000     .0387434    .0560809
      potex2 |  -.0007614   .0001196    -6.36   0.000     -.000996   -.0005269
    years_ed |   .1066103   .0028369    37.58   0.000     .1010491    .1121715
       _cons |   4.211476   .0560415    75.15   0.000     4.101619    4.321333
------------------------------------------------------------------------------

(est2 stored)

19 . estimates store model_robust

20 . esttab using PS4-21b.tex, replace compress ///
>         cells("b(fmt(a3) star) se(fmt(a3))" t(par fmt(a3))) ///
>         varlabels(potex1 "Potential Experience" potex2 "Potential Experience
> Squared" years_ed "Years of Education" _cons "Constant") ///
>         mtitles("Log Weekly Wage (Normal)" "Log Weekly Wage (Robust)") ///
>         collabels("Coef. / t" "Std. Err.") ///
>         nonumbers ///
>         stats(N, fmt(%9.0gc)) ///
>         addnotes("t statistics in parentheses" @starlegend)
(tabulating estimates stored by eststo; specify "." to tabulate the active resu
> lts)
(output written to PS4-21b.tex)

21 . eststo clear

22 .
23 . * Answer II.1.(c)
24 .
25 . estimates restore model_robust
(results model_robust are active now)

26 . graph twoway function y = _b[_cons] + _b[potex1]*x + _b[potex2]*(x^2), range(
> 0 80) xtick(#10) xlabel(#10) xtitle(Potential Experience) ytitle(Log Weekly W
> ages)

27 . graph export PS4-21c.png, replace
(file PS4-21c.png written in PNG format)

28 .
29 . * Answer II.1.(d)
30 .
31 . program drop _all

32 . program comsto, eclass
  1.         qui `*'
  2.         ereturn clear
  3.         ereturn scalar estimate = r(estimate)
  4.         ereturn scalar se = r(se)
  5.         ereturn scalar t = r(t)
  6.         ereturn scalar p = r(p)
  7.         ereturn scalar lb = r(lb)
  8.         ereturn scalar ub = r(ub)
  9.         ereturn local cmd "lincom_sto"
 10. end
```

```
33 .
34 . sum potex1
```

Variable	Obs	Mean	Std. Dev.	Min	Max
potex1	**7,538**	**17.12238**	**7.517106**	**0**	**42**

```
35 . local avg_exp = r(mean)

36 . qui estpost sum potex1

37 . esttab using PS4-21d-1.tex, replace compress ///
   >         cells("count(fmt(%9.0gc)) mean(fmt(3)) sd(fmt(3)) min max") ///
   >         varlabels(potex1 "Potential Experience") ///
   >         collabels(Obs Mean "Std. Dev." Min Max) ///
   >         nomtitles ///
   >         nonumbers ///
   >         noobs
   (output written to PS4-21d-1.tex)

38 .
39 . estimates restore model_robust
   (results model_robust are active now)

40 . lincom _b[potex1] + 2*_b[potex2]*`avg_exp'

    ( 1)  potex1 + 34.24476*potex2 = 0
```

ln_uwe	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
(1)	**.0213375**	**.0010862**	**19.64**	**0.000**	**.0192082**	**.0234668**

```
41 . comsto lincom _b[potex1] + 2*_b[potex2]*`avg_exp'

42 . esttab using PS4-21d-2.tex, replace compress ///
   >         cells("estimate(fmt(3) star) se(fmt(3)) t(fmt(2)) p(fmt(3)) lb(fmt(3)
   > ) ub(fmt(3))") ///
   >         varlabels(c1 "Marginal Effect") ///
   >         collabels(Coef. "Std. Err." t "$\text{P}>|\text{t}|$" "[95\% Conf." "
   > Interval]") ///
   >         nomtitles ///
   >         nonumbers ///
   >         noobs ///
   >         addnotes(@starlegend)
   (output written to PS4-21d-2.tex)

43 .
44 . * Answer II.1.(e)
45 .
46 . estimates restore model_robust
   (results model_robust are active now)

47 . nlcom _b[potex1] / (-2*_b[potex2] ), post

          _nl_1:  _b[potex1] / (-2*_b[potex2] )
```

ln_uwe	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
_nl_1	**31.134**	**2.189782**	**14.22**	**0.000**	**26.84211**	**35.4259**

```
48 . esttab using PS4-21e.tex, replace compress ///
   >         cells("b(fmt(3) star) se(fmt(3)) z(fmt(2)) p(fmt(3)) ci_l(fmt(3)) ci_
   > u(fmt(3))") ///
   >         varlabels(_nl_1 "Peak-Earnings Age") ///
   >         collabels(Coef. "Std. Err." z "$\text{P}>|\text{z}|$" "[95\% Conf." "
   > Interval]") ///
   >         nomtitles ///
   >         nonumbers ///
   >         noobs ///
   >         addnotes(@starlegend)
   (output written to PS4-21e.tex)

49 . estimates clear

50 .
51 . log close
         name:  <unnamed>
          log:  C:\Users\wonja\Documents\GitHub\DEDP\14.320\PS4\PS4-21.smcl
     log type:  smcl
    closed on:  16 Apr 2021, 12:26:08
-------------------------------------------------------------------------------
```