```
                                           ___  ___  ___   ___   ____(R)
                                          /__    /   ___/   /    ___/
                                         ___/   /   /___/   /    /___/
                                           Statistics/Data Analysis


         ___  ___  ___   ___   ____ (R)
        /__    /   ___/   /    ___/
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                                             979-696-4601 (fax)


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      Notes:
            1.  Unicode is supported; see   help unicode advice .
            2.  More than 2 billion observations are allowed; see    help obs_advice .
            3.  Maximum number of variables is set to 5000; see     help set_maxvar .
```

1 . doedit "D:\THU\Sophomore\Econometrics\PS3\ps3.do"

2 . do "D:\THU\Sophomore\Econometrics\PS3\ps3.do"

3 . cd "D:\THU\Sophomore\Econometrics\PS3"
  D:\THU\Sophomore\Econometrics\PS3

4 . clear

5 .
6 . log using "2022011545.log", replace
   _____

        name: **<unnamed>**
         log: **D:\THU\Sophomore\Econometrics\PS3\2022011545.log**
    log type: **text**
   opened on: **27 Apr 2024, 15:56:07**

7 .
8 . use smoking.dta

9 .
10 . **(a)
11 . gen agegrp = cond(age <=30 , 0, cond(age <= 50 , 1, cond(age <= 70, 2, 3)))

12 . tabstat cigs, by(agegrp) stat(mean)

   Summary for variables: cigs
        by categories of: agegrp

agegrp	mean
0	**7.674912**
1	**10.775**
2	**8.693467**
3	**2.022222**
Total	**8.686493**

13 .
14 . **(b)

```
15 . gen agegrp1 = cond(agegrp == 1, 1, 0)

16 . gen agegrp2 = cond(agegrp == 2, 1, 0)

17 . gen agegrp3 = cond(agegrp == 3, 1, 0)

18 . reg cigs agegrp1 agegrp2 agegrp3 restaurn
```

Source	SS	df	MS		Number of obs	=	807
					$F(4, 802)$	=	6.49
Model	4759.05206	4	1189.76302		Prob > F	=	0.0000
Residual	146994.631	802	183.285076		R-squared	=	0.0314
					Adj R-squared	=	0.0265
Total	151753.683	806	188.280003		Root MSE	=	13.538

cigs	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
agegrp1	3.097755	1.141158	2.71	0.007	.8577463	5.337763
agegrp2	.9266173	1.252965	0.74	0.460	-1.53286	3.386095
agegrp3	-5.820128	2.173652	-2.68	0.008	-10.08685	-1.553409
restaurn	-2.889338	1.106579	-2.61	0.009	-5.061472	-.7172052
_cons	8.420218	.8538899	9.86	0.000	6.744095	10.09634

```
19 .
20 . gen age_sqr = age * age

21 . reg cigs age age_sqr restaurn
```

Source	SS	df	MS		Number of obs	=	807
					$F(3, 803)$	=	11.68
Model	6342.60213	3	2114.20071		Prob > F	=	0.0000
Residual	145411.081	803	181.084783		R-squared	=	0.0418
					Adj R-squared	=	0.0382
Total	151753.683	806	188.280003		Root MSE	=	13.457

cigs	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
age	.7393289	.151925	4.87	0.000	.4411119	1.037546
age_sqr	-.0085185	.0016403	-5.19	0.000	-.0117383	-.0052986
restaurn	-2.90735	1.099944	-2.64	0.008	-5.066456	-.7482449
_cons	-4.132056	3.161885	-1.31	0.192	-10.33859	2.07448

```
22 .
23 . **(e)
24 . gen restaurn_times_educ = restaurn * educ

25 . reg cigs educ restaurn restaurn_times_educ
```

Source	SS	df	MS		Number of obs	=	807
					$F(3, 803)$	=	2.57
Model	1442.88228	3	480.960759		Prob > F	=	0.0532
Residual	150310.8	803	187.186551		R-squared	=	0.0095
					Adj R-squared	=	0.0058
Total	151753.683	806	188.280003		Root MSE	=	13.682

cigs	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
educ	-.1830318	.1821474	-1.00	0.315	-.5405731	.1745095
restaurn	-2.045542	4.771042	-0.43	0.668	-11.41073	7.319644
restaurn_ti~c	-.0506522	.3655458	-0.14	0.890	-.7681904	.666886
_cons	11.63328	2.319617	5.02	0.000	7.080049	16.18651

```
26 .
27 . log close
          name:  <unnamed>
           log:  D:\THU\Sophomore\Econometrics\PS3\2022011545.log
      log type:  text
     closed on:  27 Apr 2024, 15:56:07
     ─────────────────────────────────────────────────────────────
```

```
28 .
   end of do-file
```

```
29 .
```