

a) OLS results

Dep. Variable: GPA			
Sample size: 1000			
	Coeff	SE	t-stat
c	5.77	0.034	169.87
Gender	-0.21	0.044	-4.82
Participation	0.82	0.047	17.59

b) 1st stage regression

Dep. var : Participation			
Sample size: 1000			
	Coeff	SE	t-stat
c	0.10	0.023	4.41
Gender	0.05	0.027	1.80
Email	0.41	0.027	15.35

b) continued...

2nd stage

Dep. var : GPA			
Sample size : 1000			
	Coeff	SE	t-stat
c	5.95	0.051	116.24
Gender	-0.17	0.051	-3.37
Participation	0.24	0.122	1.96

c)

Wrong estimate for
variance ε

d) $\frac{SE \text{ part (b)}}{SE \text{ lecture}} = 1.063 \quad \neq$

$$\frac{\hat{\sigma}_{\text{correct}}^2}{\hat{\sigma}_{\text{incorrect}}^2} = \frac{\frac{1}{1000-3} \sum_i (GPA_i - 5.95 + 0.17 \text{Gender}_i - 0.24 \text{Part}_i)^2}{\frac{1}{1000-3} \sum_i (GPA_i - 5.95 + 0.17 \text{Gender}_i - 0.24 \hat{\text{part}}_i)^2}$$
$$= \frac{0.637}{0.564} = 1.129$$

$$\sqrt{1.129} = 1.063 \quad \neq$$