a).
i).
Regression model: FGPA = 2.442 + 0.063SATV + e;
Coefficient = 0.063;
Standard error = 0.028;
p value = 0.023.

ii).
95% confidence interval: [0.008, 0.117]

FGPA	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
SATV	.0630858	.0276636	2.28	0.023	.0087578	.1174139
_cons	2.441732	.1550621	15.75	0.000	2.137209	2.746256

b).
Regression model: FGPA = 1.557 + 0.173SATM + 0.014SATV + 0.200FEM + e
For the variable SATV:
Coefficient = 0.014;
Standard error = 0.028;
p value = 0.612;
95% confidence interval: [-0.041, 0.069].

FGPA	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
SATM	.1727359	.0319267	5.41	0.000	.1100352	.2354365
SATV	.0141619	.027927	0.51	0.612	-.0406837	.0690075
FEM	.2002716	.0373809	5.36	0.000	.1268596	.2736836
_cons	1.557048	.2160955	7.21	0.000	1.13266	1.981437

c).

	FGPA	SATM	SATV	FEM
FGPA	1.0000			
SATM	0.1950	1.0000		
	0.0000			
SATV	0.0922	0.2878	1.0000	
	0.0229	0.0000		
FEM	0.1765	-0.1627	0.0336	1.0000
	0.0000	0.0001	0.4082	

1). The difference can be explained that besides SATV, FGPA also significantly correlates with SATM and FEM.
2). Observations:

p-value of the correlation between SATM and SATV = 0.0000;
p-value of the correlation between SATM and FEM = 0.0001.
The observations denote that SATM is significantly collinear with SATV and FEM, so we need to exclude the variable SATM from the regression model.

d).
i).
Restricted model: FGPA = 1.605 + 0.178SATM + 0.202FEM + ε
$R_0^2 = 0.082575$
$SSR_0 = 118.151224$

Source	SS	df	MS		Number of obs	=	609
					F(2, 606)	=	27.27
Model	10.6344669	2	5.31723343		Prob > F	=	0.0000
Residual	118.151224	606	.194969016		R-squared	=	0.0826
					Adj R-squared	=	0.0795
Total	128.785691	608	.21181857		Root MSE	=	.44155

FGPA	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
SATM	.1775507	.0304635	5.83	0.000	.1177238	.2373776
FEM	.2018844	.0372225	5.42	0.000	.1287837	.2749851
_cons	1.605147	.1940477	8.27	0.000	1.22406	1.986235

OLS unrestricted model: FGPA = 1.557 + 0.173SATM + 0.014SATV + 0.200FEM + e
$R_1^2 = 0.082965$
$SSR_1 = 118.101025$

Source	SS	df	MS		Number of obs	=	609
					F(3, 605)	=	18.24
Model	10.6846657	3	3.56155523		Prob > F	=	0.0000
Residual	118.101025	605	.195208306		R-squared	=	0.0830
					Adj R-squared	=	0.0784
Total	128.785691	608	.21181857		Root MSE	=	.44182

FGPA	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
SATM	.1727359	.0319267	5.41	0.000	.1100352	.2354365
SATV	.0141619	.027927	0.51	0.612	-.0406837	.0690075
FEM	.2002716	.0373809	5.36	0.000	.1268596	.2736836
_cons	1.557048	.2160955	7.21	0.000	1.13266	1.981437

F = 0.257 < 3.9, H_0 should not be rejected

ii).
For SATV on FGPA in OLS unrestricted model:
t-value = 0.507105

Approximately, $t^2 = 0.257 = F$