

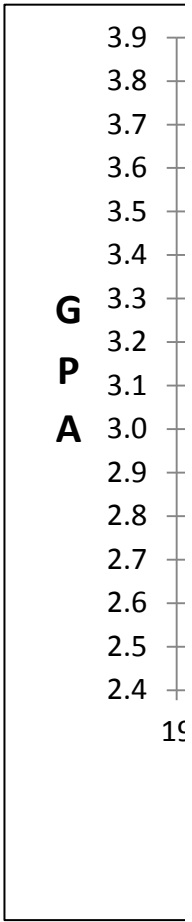
Student	GPA (y)	ACT (x)
1	2.8	21
2	3.4	24
3	3.0	26
4	3.5	27
5	3.6	29
6	3.0	25
7	2.7	25
8	3.7	30
9	3.2	23
10	3.0	28
11	3.5	30
12	2.5	20
13	3.8	32
14	2.6	26
15	2.7	23

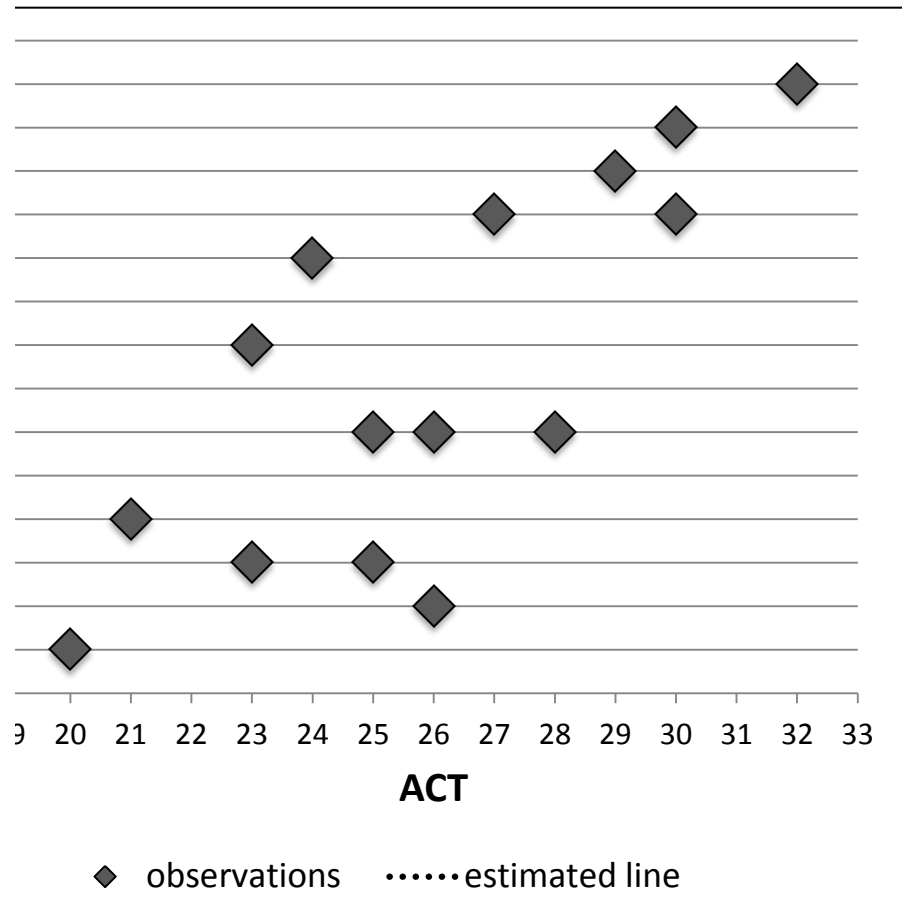
y-avg(y)	x-avg(x)	(y-avg(y))*(x-avg(x))	(x-avg(x))^2
		<b>sum</b>	<b>sum</b>

estimated y	residual

n	sum(y)	sum(x)

avg(y)	avg(x)	beta0	beta1	estimated





Student	GPA (y)	ACT (x)
1	2.8	21
2	3.4	24
3	3.0	26
4	3.5	27
5	3.6	29
6	3.0	25
7	2.7	25
8	3.7	30
9	3.2	23
10	3.0	28
11	3.5	30
12	2.5	20
13	3.8	32
14	2.6	26
15	2.7	23

vector y

matrix X	

X'							

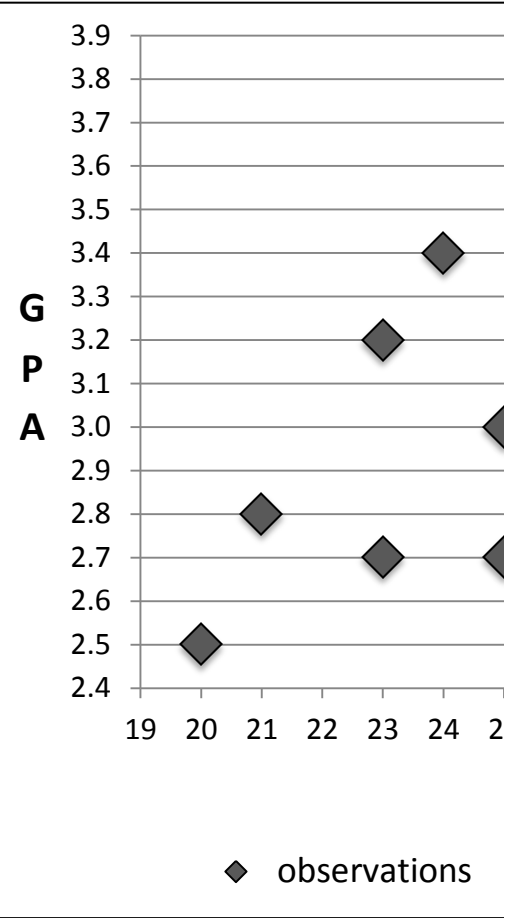
X'X	

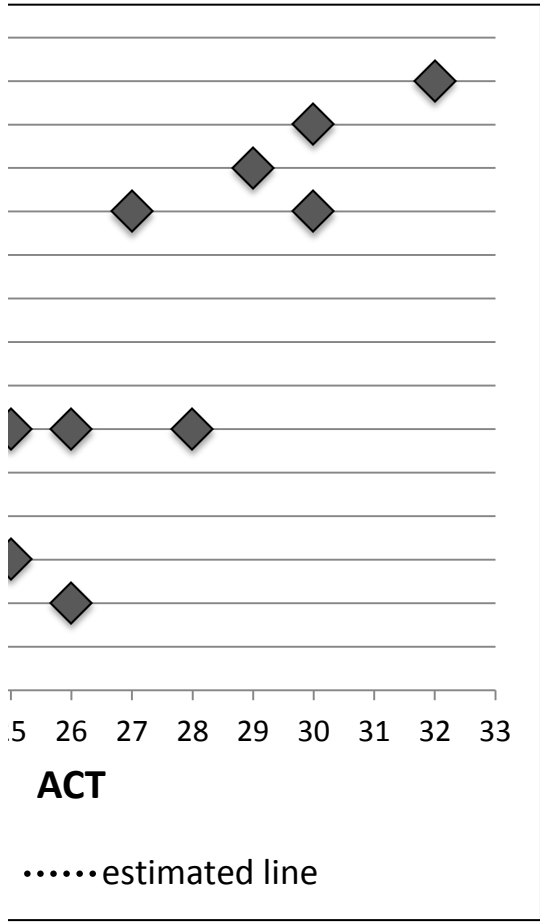
(X'X)^(-1)	

X'y

beta	
beta0	
beta1	

estimated y	residual





y	x
2	1
6	4
3	2
8	5
5	3
4	4

vector y

matrix X	

X'					

X'X	

(X'X)^(-1)	

estimated y	real model y

X'y

	beta	real
beta0		0
beta1		1.5

residual	disturbance

