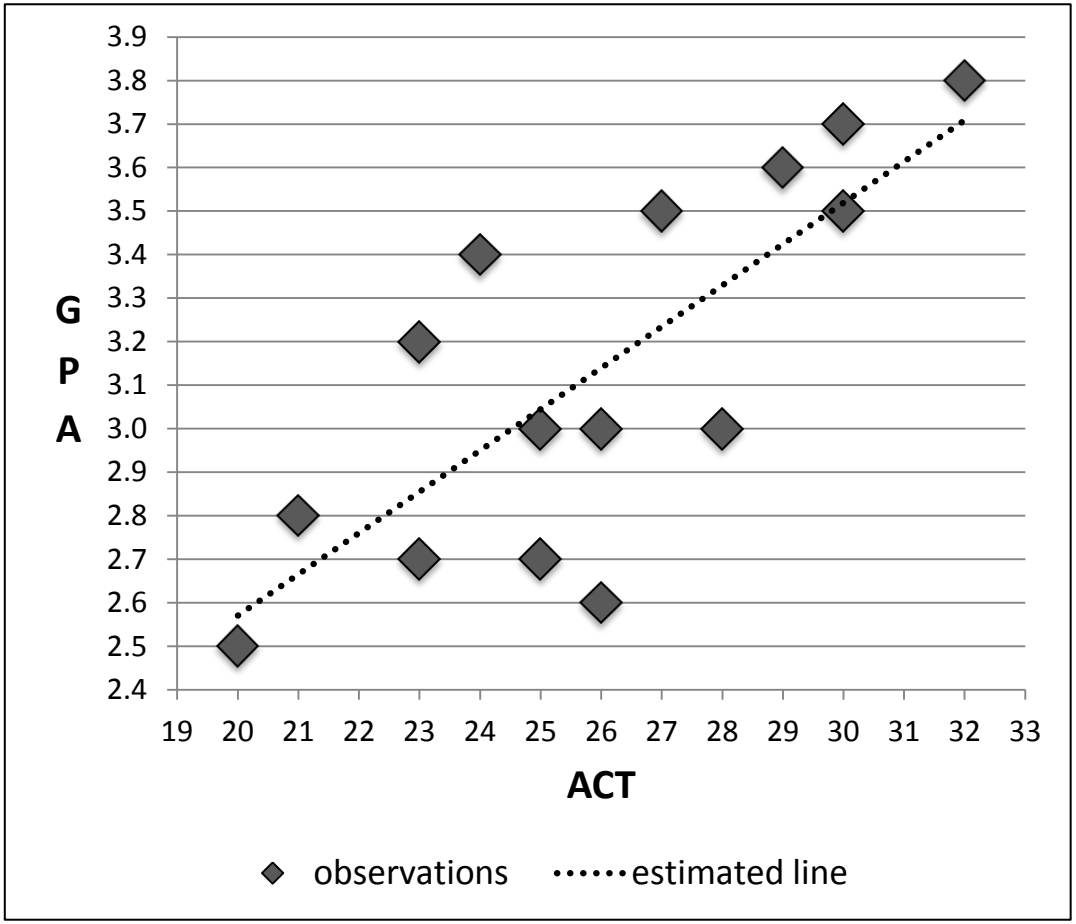
Student	GPA (y)	ACT (x)	y-avg(y)	x-avg(x)	(y-avg(y))*(x-avg(x))	(x-avg(x))^2	estimated y	residual
1	2.8	21	-0.33	-4.93	1.64	24.34	2.67	0.13
2	3.4	24	0.27	-1.93	-0.52	3.74	2.95	0.45
3	3.0	26	-0.13	0.07	-0.01	0.00	3.14	-0.14
4	3.5	27	0.37	1.07	0.39	1.14	3.23	0.27
5	3.6	29	0.47	3.07	1.43	9.40	3.42	0.18
6	3.0	25	-0.13	-0.93	0.12	0.87	3.04	-0.04
7	2.7	25	-0.43	-0.93	0.40	0.87	3.04	-0.34
8	3.7	30	0.57	4.07	2.30	16.54	3.52	0.18
9	3.2	23	0.07	-2.93	-0.20	8.60	2.86	0.34
10	3.0	28	-0.13	2.07	-0.28	4.27	3.33	-0.33
11	3.5	30	0.37	4.07	1.49	16.54	3.52	-0.02
12	2.5	20	-0.63	-5.93	3.76	35.20	2.57	-0.07
13	3.8	32	0.67	6.07	4.04	36.80	3.71	0.09
14	2.6	26	-0.53	0.07	-0.04	0.00	3.14	-0.54
15	2.7	23	-0.43	-2.93	1.27	8.60	2.86	-0.16
					sum	sum		
					15.83	166.93		

n	sum(y)	sum(x)
15	47	389

avg(y)	avg(x)
3.13	25.93

	estimated
beta0	0.67
beta1	0.09


3.9
3.8
3.7
3.6
3.5
3.4
3.3
3.2
3.1
3.0
2.9
2.8
2.7
2.6
2.5
2.4
GPA
19 20 21 22 23 24 25 26 27 28 29 30 31 32 33
ACT
observations
estimated line

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
2.8
3.4
3.0
3.5
3.6
3.0
2.7
3.7
3.2
3.0
3.5
2.5
3.8
2.6
2.7

matrix X	
1	21
1	24
1	26
1	27
1	29
1	25
1	25
1	30
1	23
1	28
1	30
1	20
1	32
1	26
1	23

X'							
1	1	1	1	1	1	1	1
21	24	26	27	29	25	25	30

X'X	
15	389
389	10255

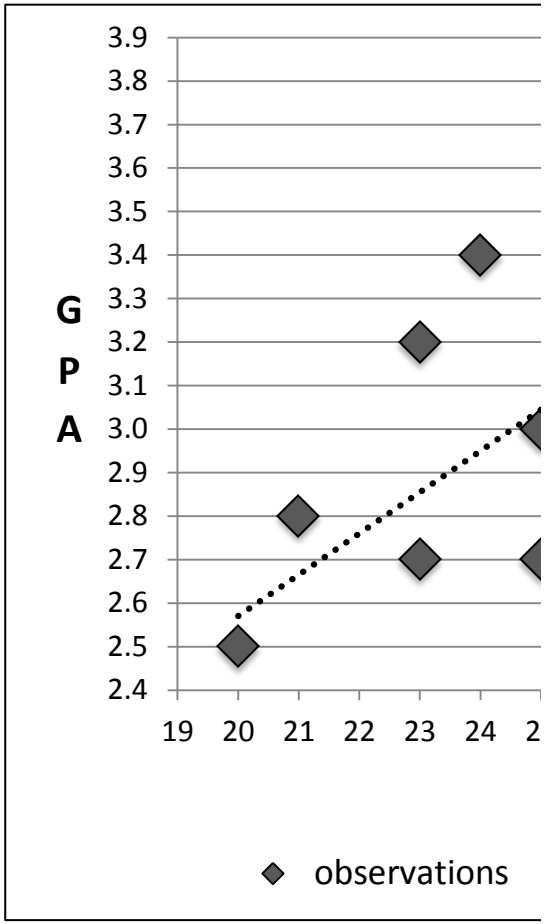
(X'X)^(-1)	
4.10	-0.16
-0.16	0.01

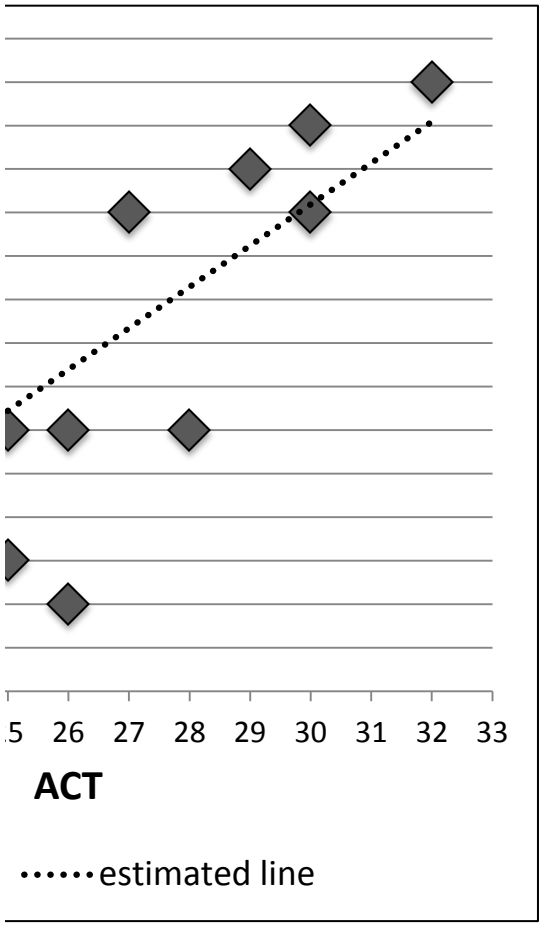
X'y
47.00
1234.70

	beta
beta0	0.67
beta1	0.09

1	1	1	1	1	1	1
23	28	30	20	32	26	23

estimated y	residual
2.67	0.13
2.95	0.45
3.14	-0.14
3.23	0.27
3.42	0.18
3.04	-0.04
3.04	-0.34
3.52	0.18
2.86	0.34
3.33	-0.33
3.52	-0.02
2.57	-0.07
3.71	0.09
3.14	-0.54
2.86	-0.16




5 26 27 28 29 30 31 32 33
ACT
estimated line

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

vector y
2
6
3
8
5
4

matrix X	
1	1
1	4
1	2
1	5
1	3
1	4

X'					
1	1	1	1	1	1
1	4	2	5	3	4

X'X	
6	19
19	71

(X'X)^(-1)	
1.09	-0.29
-0.29	0.09

X'y
28.00
103.00

	beta	real
beta0	0.48	0
beta1	1.32	1.5

estimated y	real model y
1.80	1.50
5.77	6.00
3.12	3.00
7.09	7.50
4.45	4.50
5.77	6.00

residual	disturbance
0.20	0.50
0.23	0.00
-0.12	0.00
0.91	0.50
0.55	0.50
-1.77	-2.00