	X	Y								
	Feeling Good in Statistics	Feeling of effectiveness of Section	x-xmean	y-ymean	For cov(x,y) (x-xmean)*(y-ymean)	yhat	y-yhat	(y-hat)^2	y-ymean	(y-ymean)^2
1	6	3				2.69	0.31	0.09	-0.10	0.01
2	4	4				3.27	0.73	0.53	0.90	0.81
3	6	3				2.69	0.31	0.09	-0.10	0.01
4	3	4				3.56	0.44	0.19	0.90	0.81
5	5	2				2.98	-0.98	0.97	-1.10	1.21
6	3	4				3.56	0.44	0.19	0.90	0.81
7	4	2				3.27	-1.27	1.62	-1.10	1.21
8	6	3				2.69	0.31	0.09	-0.10	0.01
9	4	3				3.27	-0.27	0.08	-0.10	0.01
10	5	3				2.98	0.02	0.00	-0.10	0.01

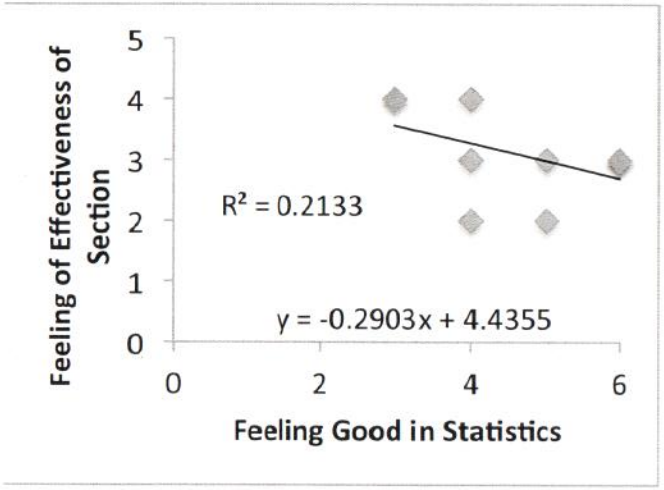
mean	4.60	3.10
Sd	1.17	0.74

sum (x-xmean)*(y-ymean)=
cov(x,y)=

sum (y-yhat)^2 =
sum (y-ymean)^2 =
R square =

hint:
Pythagorean theorem
a^2 = b^2 + c^2

b =
a =



Questions to address
1. How to calculate correlation and regression by hand?
2. What is the relationship between correlation and regression?
   when there is only one predictor vs. when there are more than one
3. What is the difference between B and beta?
4. Why R square represents the variance that x could count for y?
5. Why do you we use least square error, but not least absolution deviation?

Point-biserial correlation and independent sample t-tests

Benefit of attending section	People with M.A.	People without M.A.
	5	8
	5	8
	4	5
	5	7
	4	5
	3	4
mean	4.333333333	6.166666667
sd	0.816496581	1.722401424
t	2.355941153	df = 10
p	0.040230871	
Cohen's d	1.360203259	
r	0.597437991	

Benefit of attending section	Without M.A.?
5	0
5	0
4	0
5	0
4	0
3	0
8	1
8	1
5	1
7	1
5	1
4	1
r	0.597437991

Point-biserial correlation and one sample t-tests

	Final grades	grades-90	duplicate	split half	dummy code
	92	2	2	1.5	0
	88	-2	-2	-2.5	0
	89	-1	-1	-1.5	0
	90	0	0	-0.5	0
	89	-1	-1	-1.5	0
	95	5	5	4.5	0
different from 90?			2	2.5	1
			-2	-1.5	1
mean	90.5	0.5	-1	-0.5	1
sd	2.588435821		0	0.5	1
t	0.473160223	df = 5	-1	-0.5	1
p	0.775405079		5	5.5	1
Cohen's d	0.193166852				
r	0.207019668		r		0.207019668