

Assignment 10: Due Dec 3rd, 2017

*** Please name your homework file as ‘Assignment10 _Your name.pdf’ in pdf format and send it at biostat_sjtu@163.com , thanks for your cooperation.**

1. Read paper titled as "Large-Scale Psychological Differences Within China Explained by Rice Versus Wheat Agriculture," by T. Talhelm et al. Science, 2014 (VOL 344, ISSUE 6184), give your comments.
2. A researcher believes that there is a linear relationship between BMI (Kg/m²) of pregnant mothers and the birth-weight (BW in Kg) of their newborn .The following data set provide information on 15 pregnant mothers who were contacted for this study. Is there linear correlation relationship between BMI and BW? And is there a linear regression relationship between BMI and BW?

BMI (Kg/m ²)	Birth-weight (Kg)
20	2.7
30	2.9
50	3.4
45	3.0
10	2.2
30	3.1
40	3.3
25	2.3
50	3.5
20	2.5
10	1.5
55	3.8
60	3.7
50	3.1
35	2.8

3. In Natural Inheritance, Galton (1894) provided data, which contained a list of frequencies of daughter seeds of various sizes organized in rows according to the size of their parent seeds. Please perform a simple linear regression analysis on these data using parent seed size to predict filial seed size.

Diameter of Parent Seed(0.01 inch)	Diameter of Daughter Seed(0.01 inch)	Frequency
21.00	14.67	22
21.00	15.67	8
21.00	16.67	10
21.00	17.67	18
21.00	18.67	21

21.00	19.67	13
21.00	20.67	6
21.00	22.67	2
20.00	14.66	23
20.00	15.66	10
20.00	16.66	12
20.00	17.66	17
20.00	18.66	20
20.00	19.66	13
20.00	20.66	3
20.00	22.66	2
19.00	14.07	35
19.00	15.07	16
19.00	16.07	12
19.00	17.07	13
19.00	18.07	11
19.00	19.07	10
19.00	20.07	2
19.00	22.07	1
18.00	14.35	34
18.00	15.35	12
18.00	16.35	13
18.00	17.35	17
18.00	18.35	16
18.00	19.35	6
18.00	20.35	2
17.00	13.92	37
17.00	14.92	16
17.00	15.92	13
17.00	16.92	16
17.00	17.92	13
17.00	18.92	4
17.00	19.92	1
16.00	14.28	34
16.00	15.28	15
16.00	16.28	18
16.00	17.28	16
16.00	18.28	13
16.00	19.28	3
16.00	20.28	1
15.00	13.77	46
15.00	14.77	14
15.00	15.77	9
15.00	16.77	11
15.00	17.77	14
15.00	18.77	4
15.00	19.77	2