

Lab2 (due on April/17 12:30PM)  
20 points each

1. solve for X

$$2x_1 - 3x_2 - x_3 + 4x_4 = 1$$

$$2x_1 + 3x_2 - 3x_3 + 2x_4 = 2$$

$$2x_1 - x_2 - x_3 - x_4 = 3$$

$$2x_1 - x_2 + 2x_3 + 5x_4 = 4$$

2. write a matlab function to calculate the summation function

$$\sum (i^2 - i)$$

and the value with input i=1 to 20

3. Load ding-data1.txt (year, X, Y)

- Calculate the three correlations (Pearson, Spearman, Kendall) between X and Y
- Calculate effective sample size and check the T-table (two tails) to examine the significance of “Pearson” r (at P<5%)
- Use bootstrap to test the significance of “Pearson” r

4. Load ‘organicmatter\_three.mat’ to do the two-sample T-test

5. Load ‘organicmatter\_five.mat’ to do the two-sample F-test