

### PISc 724 - Homework # 9

Given  $X$  = percent grain protein and  $Y$  = percent malt extract, for the following data:

Percent grain protein	Percent malt extract
13.02	71.29
11.32	74.76
12.23	73.40
11.82	77.31
14.51	73.47
11.66	75.45
13.26	73.03
12.71	74.50
11.25	73.73
11.24	77.45
13.10	69.88
14.54	67.44
12.98	73.44
12.34	75.27
12.62	74.06

- Derive the regression equation and discuss what is indicated by the slope and the regression coefficient.
- Test to see if grain protein and malt extract are linearly related at the 95% level of confidence using an F-test, t-test, and confidence interval.
- Calculate a confidence of determination and discuss the meaning of the number calculated.
- Calculate a confidence interval for an individual observation of malt extract given grain protein in 13.5%. Discuss what this confidence interval is describing.
- Calculate a confidence interval for the average malt extract given grain protein is 13.5%. Discuss what this confidence interval is describing.
- Calculate the correlation coefficient. What is this number indicating.