

ISyE 6739 – Group Activity 17

Names:

Group Number:

Problem 1. A study investigates the relationship between the noise level and hypertension and reported the following pairs of data.

Blood Pressure	1	1	5	4	2	3	6	8	9
Sound level	60	65	70	80	80	80	90	90	100

- Fit a simple linear regression using least square. Find the predicted mean rise in blood pressure level associated with a sound level of 85.
Estimate the variance of error.
- Find 95% confidence intervals for both coefficients. Test the hypothesis on the significance of both coefficients. Is the linear relationship between these two variables statistically significant?
- Find R^2 (coefficient of determination).

Problem 2. In a simple linear regression setting, find the covariance between the estimated coefficients and the covariance between average of response (\bar{y}) and the estimated slope.