

Quantitative Research in Political Science I
Professor Patrick Egan

PROBLEM SET 4: Due Monday, October 28 at beginning of class.

A reminder: you may work with others in the class on this problem set, and you are in fact encouraged to do so. However, the work you hand in must be your own. Handwritten work is acceptable, but word-processed work (e.g., using LaTeX) is preferred.

1. Show that

$$S_U^2 \equiv \frac{\sum_i (Y_i - \bar{Y})^2}{n - 1}$$

is an unbiased estimator for the population variance, σ^2 .

2. WMS Exercise 8.1.
3. WMS Exercise 8.2.
4. WMS Exercise 8.3.
5. WMS Exercise 8.4.
6. WMS Exercise 8.5.
7. WMS Exercise 8.6.
8. WMS Exercise 8.8.
9. WMS Exercise 8.17.