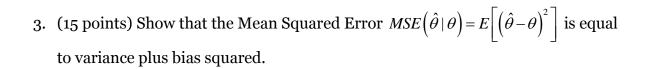
Introduction to Probability and Statistics II

<u>HW 1</u>

1. (50 points) Explain what Gauss-Markov theorem says and the assumptions it relies on.

2. (15 points) What is the trace of the $N \times N$ matrix $\left(I - X\left(X'X'\right)^{-1} X'\right)$ where X is an $N \times k$ matrix?



4. (10 points) Explain fully what the power of a test is.

5. (10 points) Explain verbally what Slutsky Theorem says.