**University of Cape Town**

**Centre for Actuarial Research (CARe)**

DOC4002F – Demographic Data and Statistics

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**Tutorial 5: Linear regression: properties of an estimator (part 1)**

**Exercise 1**

1. 
2. 
3. 
4. 
5. In allocating in the two groups, we should try to minimize. That means  should be as large as possible since  and T cannot be changed.

**Exercise 2**

The Mean Square Error of the estimator is defined by MSE() = E( – )2, – is called the sampling error, and E() – , is the bias.

1. MSE is a measure of variation between the estimator  and the true value of . It measures how accurate the estimator is; the higher the MSE, the less accurate the estimator is.
2. 