

Mgmt 230: Introductory Statistics
Quiz: Hypothesis Testing

Your Name: _____

A manufacturer of asphalt shingles provides its customers with a 20 year warranty on its products. To determine whether a shingle will last through the warranty period, accelerated-life tests are performed on the shingle. Accelerated-life testing takes only minutes and exposes a shingle to the stresses it should experience over a 20 lifetime. For example, shingles are tested for durability by repeatedly scraping a brush over them, and then measuring how many shingle granules rub off as a result. High amounts of granule loss indicate the shingle will not last very long. It is determined that the shingles will be able to last 20 years if there is less than 0.4 grams of granule loss as a result of the accelerated-life test. The data file `granule.xls` contains a sample measurements of granule loss for 170 different tests. Using this data, test the hypothesis that the shingles will last at least 20 years. Use whatever significance level you find appropriate and report and interpret your p-value.