Math 3070 § 1. **Fourth Quiz** Name:_____
Treibergs π December 1, 2010

This is an open book quiz. You are allowed to use your text, handouts and notes. Other books, laptops, PDA's and text messaging devices are prohibited. Calculators are permitted. Be sure to give complete explanations to receive full credit. There are [30] total points.

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***P*-values. Two Means.** In the article "Some Parameters for the Population Biology of Spotted Flounder in Edremit Bay" (Turkish Journal of Veterinary and Animal Science, 2005) reports that a sample of 482 female spotted flounder had an average weight of 20.95 g. with a standard deviation of 14.5 g. and a sample of 614 male spotted flounder had an average weight of 22.79 g. with a standard deviation of 15.6 g. Does the data strongly indicate the mean weight of female spotted flounder is less than the mean weight of male spotted flounder?

1. [10] State the null and alternative hypotheses. State the test statistic and explain why it is appropriate. State the rejection region.

2. [14] Compute the P-value. What is your conclusion?

3. [6] What is the probability of making a Type II error for a 95% level test, given that the mean weight of female flounder is actually 3.0 g. less than the weight of the male flounder? Assume the same sample sizes and standard deviations as given.