Name: _____

MAT 222
Spring 2019
Quiz 3

Problem 1: Some researchers performed a hypothesis test of the claim that the mean SAT Mathematics score of California High School seniors was more than 490. Assume the population standard deviation was 100. They randomly selected 25 seniors from a California High School and decided to use a significance level of $\alpha = 0.01$.

(a) What is the probability of a Type I error?

(b) What is the power of this test to detect $\mu = 560$?

(c) What is the probability of a Type II error if $\mu = 560$?

(d) What theorem do you need for (a)–(c)? What are other possible error sources?