Problem 7) You have a random sample of size of N from a normally distributed population with variance of 13 and unknown mean. We will test the null hypothesis that μ = -8 against the alternative that μ ≠ -8.

Find a rejection region so that α = 0.05.

Find the power of the test when μ = -7, as a function of N.

Choose N so that the power is ≥ 90% when μ = -7, but choose N to be as small as possible to save money.