Sample Size / Power Analysis Homework Problem

An investigator wishes to test the effects of a new Drug versus Placebo in reducing the number of errors made in a memory task involving patients with Parkinson’s Disease (PD). It is known that PD patients typically make about 5±2 (mean ± std dev) errors during this task. The study design involves randomizing subjects into one of the two treatment groups (Drug vs Placebo), obtaining baseline memory task scores on each patient, having them take the drug for 30 days, and then repeating the memory task after the 30 days. Assuming that about 10% of the subjects will not come back to complete the task at the 2nd time point for miscellaneous reasons, how many subjects would be necessary to conduct this experiment, assuming that the investigators would want to be sure to detect a difference of 1 error 80% of the time? Write up your response in paragraph form, listing any assumptions you make. Also, provide some type of documentation (e.g. screen shots) from at least 2 different computer programs that aid you in your calculations.