**FINN 6216 Homework Assignment #2.1**

**Same rules as for previous assignments**

1. Suppose we create a normal mixture model of the formand in this case is *exponential***,** that is, for Assume that and that and is a nonsingular d x d matrix. Is an elliptical distribution? If it is and tell me what the dispersion matrix and the characteristic generator are.
2. Do problem (1), but now assume that (I am using instead of because I don’t want to confuse it with the function). This would yield a Symmetric Generalized Hyperbolic distribution.
3. Consider the data for SPY and AAPL from Homework #1.1. Use the iterative algorithm we discussed in class to estimate the location vector (means) and dispersion matrix (covariance), assuming that this data follows an elliptical distribution. But does it really? Check whether it does by computing for a reasonable sequence of increasing values of where are the absolute shifts of AAPL and SPY, respectively.

**This homework assignment is due Thursday, February 9.**