Write SAS Macro and R function to perform the following task

For a given distribution with two parameters (it can be normal, uniform, or gamma), and an integer n:

1. Generate an n by n symmetric random matrix (say A). In this matrix, the elements are random variable from the given distribution. Notice that the matrix must be symmetric.
2. Compute A10. You should think about the best way to compute this. Try to save the computation time. Hint: use eigenvalue decomposition.

Test you SAS Macro and R function with the following set up

1. Normal distribution with mean 1 and variance 4, n=10
2. Uniform distribution from [0, 3], and n=15
3. Gamma distribution with alpha=1, beta=1, and n=20