Math 3280 Worksheet 20

Group members (2 to 4): _____

(1) Compute the eigenvectors and eigenvalues of the matrix

$$A = \begin{pmatrix} -1 & 0 & 0 \\ -3 & -1 & 3 \\ -3 & 0 & 2 \end{pmatrix}$$

(2) Compute the inverse P^{-1} of the matrix $P = (v_1|v_2|v_3)$ where the v_i are linearly independent eigenvectors of A.

(3) Use the fact that $A^n = PD^nP^{-1}$, where D is a diagonal matrix, to compute A^{10}.