

Math 3280 Worksheet 31

Group members (1 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  $A^{10}$ .