

Please complete following problems.

1. [FIS P375 6].
2. [FIS P376 10].
3. [FIS P376 11].
4. [FIS P392 2 (a) (c) (d)].
5. [FIS P393 10].
6. [FIS P393 21].
7. Find the Jordan canonical form J of following matrix A :

$$A = \begin{bmatrix} 3 & 4 & 18 \\ -1 & -1 & -11 \\ 0 & 0 & 2 \end{bmatrix}$$

Then find a matrix Q such that $A = QJQ^{-1}$.