

Quiz 1

Name: _____

ID: _____

Circle your classroom: 201, 303, 502

1. Let $A = \begin{pmatrix} 2 & 0 & 0 & 1 \\ 2 & 1 & 0 & 2 \\ -2 & 0 & 1 & -2 \\ 0 & -1 & -1 & 1 \end{pmatrix} \in M_4(\mathbb{C})$ whose characteristic polynomial is

$$(x - 1)^3(x - 2).$$

Find an invertible matrix P and a Jordan matrix J such that $P^{-1}AP = J$.

2. List all possible Jordan forms (up to permutation of Jordan blocks) whose characteristic polynomial is $x^3(x + 1)^2$.