

**NAME:** \_\_\_\_\_  
(Last, First)

1. Find the characteristic polynomial and the eigenvalues (only!) of  $\begin{pmatrix} 3 & 6 \\ 2 & -1 \end{pmatrix}$ .

2. You are GIVEN that the matrix  $B$  below has characteristic polynomial  $p(\lambda) = (\lambda - 3)^2(\lambda - 1)$ . Find the eigenvectors associated with  $\lambda_1 = 3$  (only!).  $B =$   
 $\begin{pmatrix} 6 & 3 & 3 \\ -5 & -2 & -5 \\ 0 & 0 & 3 \end{pmatrix}$