Name: _____ ID #:_____

As always you need to show your work. Fill in the appropriate blanks

1. The characteristic equation of a matrix A is $\boxed{\qquad\qquad\qquad\qquad = 0}$.

2. The characteristic equation of $A = \begin{pmatrix} 6 & 0 & 0 \\ 0 & 1 & 2 \\ 1 & 0 & 1 \end{pmatrix}$ is $\boxed{\qquad\qquad\qquad\qquad = 0}$

and the eigenvalues are $\boxed{\qquad\qquad\qquad}$.

3. Matrices A and B have the same eigenvalues if they are similar.

Matrices A and B are similar if $\boxed{\qquad\qquad\qquad}$ for some $\boxed{\qquad\qquad\qquad}$