Name: ___________________ ID #:_______________________

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

1. A pair (λ, v) is an eigen pair if $\boxed{}$ and $\boxed{}$

2. For $A = \begin{pmatrix} 2 & 1 & 1 \\ 2 & 1 & 1 \\ -2 & 1 & 1 \end{pmatrix}$.

2.1. Is $v = \{1, 1, -1\}$ an eigenvector of A? $\boxed{}$

2.2. If it is an eigenvector compute the associated eigenvalue $\lambda =$ $\boxed{}$

3. For $A = \begin{pmatrix} 2 & 1 & 1 \\ 2 & 1 & 1 \\ -2 & 1 & 1 \end{pmatrix}$.

3.1. Is $v = \{0, 1, -1\}$ an eigenvector of A? $\boxed{}$

3.2. If it is an eigenvector compute the associated eigenvalue $\lambda =$ $\boxed{}$

4. For $A = \begin{pmatrix} 4 & 2 \\ -2 & 5 \end{pmatrix}$.

4.1. Is $\lambda = 8$ an eigenvalue of A? $\boxed{}$

4.2. If it is an eigenvalue compute an associated eigenvector. $v = \begin{pmatrix} \\ \\ \end{pmatrix}$

5. For $A = \begin{pmatrix} 4 & 2 \\ -2 & 5 \end{pmatrix}$.

5.1. Is $\lambda = 5$ an eigenvalue of A? $\boxed{}$

5.2. If it is an eigenvalue compute an associated eigenvector. $v = \begin{pmatrix} \\ \\ \end{pmatrix}$

6. For $A = \begin{pmatrix} 4 & 2 \\ -2 & 5 \end{pmatrix}$.

6.1. Is $\lambda = 2$ an eigenvalue of A? $\boxed{}$

6.2. If it is an eigenvalue compute an associated eigenvector. $v = \begin{pmatrix} \\ \\ \end{pmatrix}$