

QUIZ #10, 9/27/07

MATH 54, FALL 2007

Show your work and justify your answers! Feel free to use both sides.

Name:

1. (4 pts) Write the transformation given in the standard basis by the matrix $A = \begin{bmatrix} 2 & 1 \\ 1 & 1 \end{bmatrix}$ in terms of the basis $\vec{v}_1 = \begin{bmatrix} -1 \\ 1 \end{bmatrix}$, $\vec{v}_2 = \begin{bmatrix} -2 \\ 3 \end{bmatrix}$.

2. (a) (3 pts) Show (by checking the conditions) that the following is a subspace: the space of all 2×2 matrices with $\begin{bmatrix} 0 \\ 1 \end{bmatrix}$ in their kernel.

(b) (3 pts) Find a basis for the subspace given in part (a).