## Math 228: Intro to Lin Alg & Diff Eqns Quiz 7 March 28, 2002

Name:\_\_\_\_\_\_ Section:\_\_\_\_\_

1. Let  $T: \mathbb{R}^3 \to \mathbb{R}^2$  be the linear transformation defined by

$$T(x, y, z) = (5x - y - z, -4x + y + 2z)$$

Let  $B = \{(2, -1, 0), (-1, 2, -1), (0, -1, 2)\}$  be a basis for  $\mathbb{R}^3$  and let  $C = \{(3, 11), (1, 4)\}$  be a basis for  $\mathbb{R}^2$ . Find  $[T]_{BC}$ .

2. Find the eigenvalues and eigenvectors of the matrix  $A = \begin{bmatrix} 11 & -2 \\ 24 & -3 \end{bmatrix}$ .