Take-Home Quiz 6   (*Due at 7:00 p.m. on Fri. October 22, 2010*)

Division: **ID#:**   **Name:**

Let $\boldsymbol{u}$, $\boldsymbol{v}$, $\boldsymbol{w}$ and A be as follows.

$$\boldsymbol{u} = (1, 2, -1),\ \boldsymbol{v} = (3, 0, -2),\ \boldsymbol{w} = (5, -4, 6),\ \text{and}\ A = \begin{bmatrix} 0 & 1 & 0 \\ 6 & 2 & 2 \\ 0 & 3 & 4 \end{bmatrix}.$$

1. Compute $\boldsymbol{u} \times \boldsymbol{v}$. (Show work!)

2. Find the volume of the parallelopiped (*heiko-6-mentai*) in 3-space determined by the vectors $\boldsymbol{u}, \boldsymbol{v}, \boldsymbol{w}$. (Show work!)

3. Find the characteristic polynomial of A and all eigenvalues of it. (Show work!)

4. Find an eigenvector of A corresponding to its smallest eigenvalue. (Show work!)

Message 欄：あなたにとって一番たいせつな（または、たいせつにしたい）もの、ことはなんですか。そのほか、何でもどうぞ。[HP 掲載不可は明記のこと]