Take home Quiz 5 - Linear Algebra   Spring 2006   **NAME:**

Due Tuesday, March 28. To receive credit you MUST SHOW ALL YOUR WORK.

1. (10 pts) Problem 15, page 206 textbook (section 4.3).

2. (5 pts) Use vectors to find the angle between two diagonals of a three dimensional cube.

3. (5 pts) Prove that if $\mathbf{u}$ and $\mathbf{v}$ are vectors in $\mathbf{R}^n$, then

$$\|\mathbf{u} + \mathbf{v}\|^2 + \|\mathbf{u} - \mathbf{v}\|^2 = 2\|\mathbf{u}\|^2 + 2\|\mathbf{v}\|^2$$