

UH - Math 4378/6309 - Dr. Heier - Spring 2011

HW 12

Due **Wednesday, April 20**, at the beginning of class.

1. (2 points) Let V be a finite-dimensional inner product vector space. Let $T : V \rightarrow V$ be the orthogonal projection onto the subspace W . Prove that for all $x \in V$, $T(x)$ is the vector in W which is closest to x .
2. (2 points) Section 7.1, Problem 4
3. (2 points) Section 7.1, Problem 5
4. (2 points) Section 7.1, Problem 6 (Note: This problem can be done without knowledge of the material in Section 7.1.)
5. (2 points) Section 7.1, Problem 7(a)–(d)
6. (1 bonus point) Section 7.1, Problem 7(e),(f)