

HOMEWORK 8.

Due Monday, November 14, in class.

1. Let V be an inner product space, let $x_i \in V$, $1 \leq i \leq n$, and let A be an $n \times n$ matrix such that $A_{ij} = \langle x_i, x_j \rangle$. Prove that vectors x_i , $1 \leq i \leq n$, are linearly independent if and only if A is invertible.

2. Do Problem 8 in Section 6.1.

3. Do Problem 25 in Section 6.1.

4. Do Problem 12 in Section 6.2.

5. Do Problem 18 in Section 6.2.