

**HOMEWORK ASSIGNMENT 9**  
**MATH429: LINEAR ALGEBRA**

- This assignment is to be submitted by **Thursday, 14th November, 8PM.**
  - For each question, please show your work neatly.
  - Questions from sections, are taken from the course textbook: Friedberg, Insel and Spence, *Linear Algebra*, 4th Edition.
- (1) [5] Section 5.4 Q23 (Hint: See proof of Theorem 5.5 and then use induction on  $k$ .)
- (2) [5] Section 5.4 Q24 (Hint: If  $\lambda_1, \dots, \lambda_k$  are distinct eigenvalues of  $T$  then take the union of the bases of  $E_{\lambda_i} \cap W$ .)
- (3) [5] Section 7.1 Q2(c)
- (4) [5] Section 7.1 Q3(a)
- (5) [10] Section 7.1 Q7 (a)-(e)