Homework #8: Ch. 6. Exercises 13, 15, 17, 21, 24, 26, 27, 28.

Hints:

Ex. 24: Use results of the Exercise 10 and the proof of Thm 6.45

Ex. 26: Inner product on $\mathbb{F}$ is defined as $\langle x, y \rangle = x\bar{y}$

Ex. 28. This problem is more difficult than it looks. Make sure you do not prove accidentally that any vector is an eigenvector of $T^*$. At some point you may want to analyze the range of $T^* - \lambda I$, and to show that the latter operator has a non-trivial null space, which implies that $\bar{\lambda}$ is an eigenvalue.