

Math 110 Assignment 10

(I) *Exercises.*

Axler Chapter 7: 6, 7, 8, 10, 11, 13, 15, 17, 18, 19, 20, 23

(II) *Problems.* Due Friday, April 20 by 3pm at the location your GSI has specified for turning in homework.

1. (6/10) Prove that if V is a finite-dimensional inner product space over either \mathbb{R} or \mathbb{C} , and $T \in \mathcal{L}(V)$ is self-adjoint, then the minimum of $\|Tv\|$ over all vectors $v \in V$ such that $\|v\| = 1$ is equal to the smallest absolute value of an eigenvalue of T .

2. (4/10) Use Problem 1 to solve Axler, Exercise 7.14.