THE CHINESE UNIVERSITY OF HONG KONG Department of Mathematics MATH4010 Functional Analysis 2021-22 Term 1 Homework 6 Deadline: 2021-11-29 Monday

Notice:

- All the assignments must be submitted before the deadline.
- Each assignment should include your name and student ID number.
- 1. Prove that in a complex (resp. real) inner product space, $x \perp y$ if and only if

 $\|x + \lambda y\| = \|x - \lambda y\|$

for all scalars $\lambda \in \mathbb{C}$ (resp. \mathbb{R}).

— THE END —