MMAT 5010 Linear Analysis (2023-24): Homework 11
Deadline: 26 Apr 2024

Important Notice:

♣ The answer paper must be submitted before the deadline.
♠ The answer paper MUST BE sent to the CU Blackboard. Please refer to the course web for details.

1. Let $T : \ell^2 \to \ell_2$ be the right operator, that is $T(x_1, x_2, ...) := (0, x_1, x_2, , ...)$ for $(x_1, x_2, ...) \in \ell_2$. Find T^*.

2. Let X be a Hilbert space and let $T, S \in L(X)$. Show that

   (a) $(TS)^* = S^*T^*$.

   (b) if T is invertible, that in $T^{-1} \in L(X)$ exists, then $(T^{-1})^* = (T^*)^{-1}$.

$* * *$ **End** $* * *$