

# Geometric Analysis, Autumn 2014

University of Maryland, Department of Mathematics course 742

**HW 3:** (due by November 18.)

**1.**

Simon, Problem 5.3.

**2.**

Simon, Problem 5.9.

**3.**

Simon, Problem 6.5.

**4.**

Prove that the map  $T$  constructed in the Lax–Milgram proof is an isomorphism once we know that  $\lambda\|u\| \leq \|Tu\| \leq \Lambda\|u\|$ . (Give more details than in the book!)

**5.**

Simon, Problem 7.2.