HOMEWORK 2
DUE JANUARY 24

(1) Pages $18 - 19$ problems #10,16,17,19.
(2) Recall that we say a set S in a Hilbert space $\mathcal{H}$ is total if the linear span of S is dense in $\mathcal{H}$. Show that if $\{e_n\}_{n\in\mathbb{N}}$ is a total orthonormal sequence, then it is a maxmal orthogonal system.
(3) Page 23 problems #4, 8.
(4) Page 24 problem #1.