1. R & Y 3.7

2. R & Y 3.8

3. Show that $C[0,1]$ with the L^2 norm is not complete.

4. "Symmetric bilinear forms are determined by their diagonal."

   Suppose B and C are symmetric bilinear forms on a vector space X and $B(x,x) = C(x,x)$ for all $x \in X$. Show that $B(x,y) = C(x,y)$ for all $x, y \in X$.

5. Let Z be the subset of ℓ^2 of sequences that are eventually zero. Show that $\overline{Z} = \ell^2$.

6. R & Y 3.10

7. R & Y 3.14

8. R & Y 3.15

9. R & Y 3.20 (a)