Second Homework Assignment

Chapter 13, due 9/8: 4,14,20,24,28,34,36,48,52,56

* problem, 20 points: Define $H = \left\{ \begin{pmatrix} a & b \\ -b & a \end{pmatrix} \in M_2(\mathbb{C}) \right\}$. Show that $H$ is a subring of $M_2(\mathbb{C})$. Does $H$ have any zero-divisors? Is it an integral domain? This set is often called the quaternions, and you may have seen a definition in a different way.