1. We stated in class that $\text{KU}^0(S^2) \cong \mathbb{Z}[H]/(1 - H)^2$. As an abelian group, this is

$$\mathbb{Z}[H]/(1 - H)^2 \cong \mathbb{Z}\{1\} \oplus \mathbb{Z}\{H\}.$$ 

(a) Show that $H^n$ is nonzero for all $n$

(b) Show that $H^n = 1$ if and only if $n = 0$.

2. Compute $\tilde{\text{KU}}^*(\mathbb{C}P^2)$. (Hint: $\mathbb{C}P^2$ is the cofiber of the Hopf map $\eta : S^3 \to S^2$.)

3. The periodicity theorem gives an answer for $\text{KU}^0(S^2 \times S^2)$. Compute this same group using the cofiber sequence $S^2 \vee S^2 \hookrightarrow S^2 \times S^2 \twoheadrightarrow S^2 \wedge S^2$. 