# Homework 3

(1) Compute the framed cobordism group in dimension 1 directly. Use this to compute $\pi_4(S^2)$.

(2) Compute $\Omega_1^{\text{fr}}(S^1 \times S^1)$ directly.

(3) Let $X \subset Y$ be a complex submanifold of a complex manifold of $Y$. What are the Chern classes of $TX$ in terms of the Chern classes of $TY$ and the normal bundle of $X$?

(4) Use the answer to the previous question to compute the Chern classes of the tangent space of

$$\left\{[z_0, \cdots, z_3] \ : \ \sum_{i=0}^{3} z_i^3 = 0\right\} \subset \mathbb{C}P^4.$$

(5) What is $K(S^1 \times S^1)$?