Math 1190 Homework #4

We will talk about this problem on Monday, September 28th.

Problem: The sequence of integers $u_0, u_1, u_2, u_3, \ldots$ satisfies $u_0 = 1$ and

$$u_{n+1}u_{n-1} = ku_n \quad \text{for each } n \geq 1,$$

where k is some fixed positive integer. If $u_{2000} = 2000$, determine all possible values of k.