In class on Wednesday we provided the following definition of an odd number:

**Definition.** An odd number is an integer of the form $n = 2k + 1$, where $k$ is an integer.

1. Provide a good definition of an even number.

2. Consider an odd number $n$. Prove that $n^2 + n$ is always even.

3. Outside of mathematics, making definitions precise is often difficult. Provide a precise definition for a table (the kind at which you eat) so that it is consistent with our intuitive idea of a table. Every object satisfying the definition should be something we call a table, and everything we call a table should be included in this definition.