**Homework #2**

A 40 KG metal weight is to be divided into four pieces such that these 4 pieces can be used to weigh any amount between 1 KG and 40KG using a 2 slot traditional balance. What would be the proper weight for each of these pieces?

You are required to formulate the problem by giving:

1. A proper state representation (with suggested data structure)
2. Initial and final state
3. Applicable operators
4. Pseudo-code of the successor function
5. Which search technique would you suggest to solve the problem?