Problem 1:

A dude finds that he needs to cross a river with his cat, his parrot, and a bag of seed. Unfortunately the boat is only big enough for him and one other thing. There are some issues though, if he leaves the cat alone with the bird, the cat will eat the bird. If he leaves the bird alone with the seed, the bird will eat the seed.

Initially the problem seems easy, but it is deceiving. The guy cannot just take one item over at a time. It has to be done very specifically other wise he will lose one of the items.

The goal is to get everything across the river without loosing something.

The constraints are the limited space in the boat, the cat wanting to eat the bird, and the bird wanting to eat the seed.

Sub goals:

Prevent the bird from being eaten.

Prevent the seed from being eaten.