A Cat, a Parrot, and a Bag of Seed:

Only two out of three of the items are safe together. That is the cat and the seed. The cat will not eat the seed; he will only eat the bird. The goal is not only to get each item across the lake safely; it was also to not leave the wrong two items together alone on either side. The visible constraints are not leaving the cat alone with the bird; and not leaving the bird alone with the seed. The sub goals are to get each item across one at a time. In order to do that first the bird will have to be taken across. Then the seed will have to go next, followed by the cat. These solutions will be effective for all temptation for one of the items to be eaten will be removed. I came to this conclusion by first considering the threat each item posed to the other. After writing this down I chose to move the bird first because the cat would not eat the seed. After this was done I could safely remove the seed and the cat one after another since there was no obvious threat of the cat eating the seed.

Sock in the Dark:

There are 20 socks and the problem only confirms that there will be 3 matching pairs. There will be two black pairs and two white pairs. The other possible pairs are unknown. I need to figure out how to get all the matching pairs. The one constraint is that I must do this using the least amount of socks. The sub goals are to find at least one matching pair, and one pair in each color. I believe by taking all 20 of the socks out of the drawer I will achieve a matching pair in each color. Once I have all of the socks I will have all of the matches; therefore, this solution will accomplish each of my goals. The catch is that I cannot turn the light on until I have selected the least amount of socks, but it never stated how many that was. In order to ensure I obtained all of the possible matches I would have to empty the drawer. I came to this conclusion simply by brainstorming.

Predicting Fingers:

The girl needs to know which fingers she will land on after counting to 1,000. The underlying issue is that the finger she lands on alternate between her ring and her first finger. The only constraints are the sub goals, which require me to figure out what finger she will land out once she has reached the number 10,100, and 1,000. I could count my fingers up to one thousand but that would take forever. The goal is to predict what the fingers will be. In order to do this I counted my finger to find some form of pattern. I found that the first and the ring finger are landed on twice in a row after each set of ten. I then used this method to count each finger by 10 which lead me to the conclusion that the first finger would be 10, the ring finger would be 100, and the first finger would then be 1,000.