A Cat, a Parrot, and a Bag of Seed

1.

a. The man on the boat must transport the three items across the river without leaving two behind that will eat something.

b. That no matter what you do if there is only one space available something is getting eaten.

c. To get everything over the river without losing one.

2.

a. The constraints are that the man only has room for one other item in his boat at a time.

b. There are no sub goals.

3.

a. A solution for all the problems would be 2 cages one for the cat and one for the bird to keep the cat away from bird and the bird away from the seeds.

4.

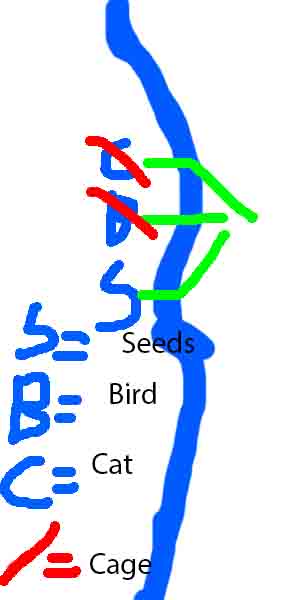
a. The solution does meet the goals.

b. And it will work in ALL cases.

5.

a. First you would put the cat and bird in the cage, then you would take the bird across the river, then you would take the cat, and finally the seeds.

b. I drew a map and drew lines showing how they would go across the river.



Socks in the Dark

1.

a. Its dark and you are required to sort the socks.

b. The socks are dark and its dark so it makes it hard to see the socks.

c. The overall goal is to get all the socks into a pair.

2.

a. The constraints are that you can only check after each selection is made, and its dark.

b. One matching pair.

One matching pair of each color.

3.

a. A solution to only checking after each selection is to make sure to check. And a solution to the darkness is to use a flashlight.

4.

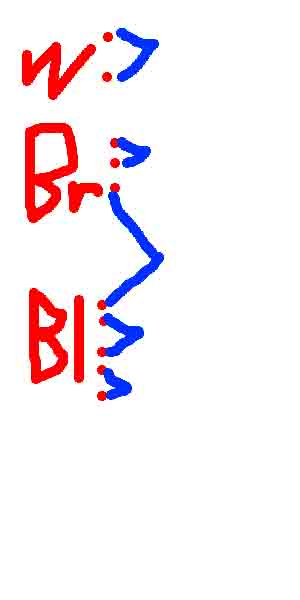
a. Yes the solution meets the goals because if you check and have a flashlight its really hard to mess up.

b. If you check and have a flashlight its really hard to mess up.

5.

a. Fist you would grab the flashlight and shine it on the socks then you would start matching them according to their color. While doing that you would match one matching pair for each color. The minimum number of socks required to complete the sub-goals for B. you would need 19 gloves total in order to have a pair of each color any less and you wont have enough and for A. The amount you would have to take it 10.

b. In the picture it shows how the socks would go togeather.



Predicting Fingers:

1.

a. To find out what finger 10 would be if her thumb is 9.

b. An immediate problem is to find a formula.

c. To find out what finger 10 would be if her thumb is 9.

2.

a. It’s a weird way of counting

b. find out what finger for 10,100,1000

3.

a. To find a formula.

4.

a. Yes because the formula (8n+1) so since 8x1+2=10, 10 would end on the middle finger. And with 100 it would be 8\*12+4=100 so it would end on the pinky. And 8\*125=1000 so you would end on your thumb

b. Yes the solution works in all cases.

5.

a. Fist you would divide 10 by 8 and depending on how many times 8 goes into ten you would put the down then add up the remainders and count from your thumb after that.

b. Counting on my fingers plus simple algebra.