Problem 1: A cat, a Parrot, and a Bag of Seeds

1. Define the problem

Man has to get a cat, a parrot, and a bag of seeds across a river without them eating each other.

The Cat and Parrot can’t be left alone or the cat will eat the Parrot.

The Parrot and Seeds can’t be left alone or the Parrot will eat the Seeds.

He can only take one thing at a time across the river.

1. Break the problem apart

1. Can’t leave the Cat or Parrot, and the Parrot or Seeds.

2. You can only take 1 thing at a time.

1. Identify potential solutions

1. You can leave the Cat and Seeds.

2. You could bring one of the items back with you.

1. Evaluate each potential solution

He can only leave the cat and seeds alone together, so he has to take the Parrot across first.

If he always has the Parrot with him nothing well every get eaten because the Parrot is needed in both scenarios that something gets eaten.

1. Choose a solution and develop a plan to implement it.

Take the Parrot across first. (Leaving the Cat and Seeds together, which is fine)

Then take the seeds across, but he can’t leave the seeds with the Parrot so he brings the Parrot back with him.

Then take the Cat across (Now that seeds and cat are across and the Parrot is back at the start)

Finally bring the Parrot back across to complete the task.

Problem 2: Socks in the Dark

1. Define the problem

You can’t see the socks and have 5 pairs of black, 3 pairs of brown and 2 pairs of white.

You want at least 1. One Matching pair

2. One matching pair from each color

1. Break the problem apart

You want to make sure you have what you need and not have to go back in for more socks.

1. Identify potential solutions

The minimum you need to have for one matching pair is one of each color and then one more for the match.

If you want a pair of every color you need every sock from the bigger sets and then a pair from the smallest.

1. Evaluate each potential solution

Both or this solutions will meat the goal for any number of socks weather it is these 20 socks and 3 colors, or if it’s 80 socks and 6 colors

1. Choose a solution and develop a plan to implement it.

For the first problem getting 1 matching pair. You would have to pick out a 4 socks to be guaranteed that you have a match. That would give you 1 black, 1 brown, 1 white and the forth one will make a pair for one of the colors.

For the second problem getting a match in all the colors. You will need all of the two biggest colors then two more socks. The two biggest are a pair of 5 and a pair of 3. So you need all16 black and brown socks and then the final pair of white socks, for a total of pulling out 18 socks.

Problem 3

1. Define the problem
2. Break the problem apart
3. Identify potential solutions
4. Evaluate each potential solution
5. Choose a solution and develop a plan to implement it.