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

1. Ok, so this man needs to get a cat, a parrot and a bag of seed to the other side of the river. His boat is small; he can only transport one item at a time. However if he is not careful and he leaves the cat alone with the parrot, the cat will eat it. If he leaves the parrot alone with the seed the parrot will eat the seed. How will he get all 3 and himself across the river?
2. The cat cannot be left with the parrot and the parrot can’t be left with the seed. The boat can only carry the man and one other thing at a time. His goal is to get all 4 of them across the river.
3. Possible solution: First take over the parrot, and then go get the cat, however when you drop the cat off, take the parrot back to the original side. Drop the parrot off at the original side and take the bag of seed over to the destination side and leave the seed with the cat. Then go back across and pick the parrot back up and return to the destination.
4. This solution meets all the goals.
5. At first I thought this was easy, just take the parrot over first and drop him off. But then I realized that, that wouldn’t work cause no matter what I brought over next one would either be eaten by the parrot or the other would eat the parrot. So then I came to my final solution. The man will take the parrot over and drop him off. Then he will go get the cat. Once he drops the cat off, he will take the parrot back over to the side with the seed. He will drop the parrot back off and take the seed over to the side with the cat. After he drops the seed off he will go back over and pick up the parrot and bring him to where the cat and seed are.

**Socks In the Dark:**

1. So there’s 10 black socks, 6 brown socks and 4 white socks. It’s dark in the room and you can only look at them in the light once the selection has been made. What is the least amount of socks will you have to grab in order to:
2. Have at least one matching pair
3. Have at least one matching pair of each color.
4. So we have two goals in this one. Have at least one matching pair and then have a matching pair of each color.
5. Possible solution for goal **a:** Since there are three different colors and you only need one matching pair; the least amount of socks you will need to grab is 4. However this solution will not work for goal b.

Possible solution to goal **b:** Since the solution for goal a will not work for this one. I came to the conclusion that the least amount of socks that will need to be grabbed is 18. Since there are only 4 white socks the only way to ensure that you have a matching pair of white ones you need to grab all but 2.

1. The solution to goal a will not work for both since 4 socks isn’t even enough to get 3 whole pairs of socks regardless of color. The solution for goal b will work for both. 18 socks is way more then enough to achieve goal a, and just the right amount for goal b.

**5)** Final solution to achieve both goals: In order to achieve both goals in this problem you will need to grab at least 18 socks from the drawer.