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SDI 00

Problem Solving

**1. A Cat, a Parrot, and a Bag of Seed.**

**Define the Problem**

1. A man had a cat, a parrot, a bag of seed. He needs to get them across the river without losing any of them! The boat can only carry the man and one other item So, how will the man get them all across the river?
2. The cat eats parrots, the parrot eats seeds, the seeds eat nobody!!
3. To get everything across the river.

**Break the problem apart**

1. The constraints are that the cat will eat the parrot and the parrot will eat the seed.
2. The sub goals are to keep the parrot and seed from being eaten.

**Identify potential solutions**

1. The cat and the seed can be alone together, so the parrot should travel across first.

**Evaluate each potential solution**

1. The solution does meet all goals.
2. I don’t know if it works for all cases, but in this case the parrot should definitely go first.

**Choose a solution and develop a plan to implement it**

1. The man needs to carry the parrot across the river first, leaving the bag of seed and cat alone together on the other side.
2. The man can then make other trips for the seed and the cat that were previously alone.

**2. Socks in a Drawer**

**Define the Problem**

1. There are 20 socks in a drawer: 5 pairs of black socks, 3 pairs of brown and 2 pairs of white. What’s the least amount of socks needed to be drawn blindly to grantee the results of at least one matching pair and one matching pair of each color.
2. There is an even number of socks
3. To get a matching pair, and a pair of matching colors.

**Break the problem apart**

1. The constraints are that there are both left and right socks, as well as in different colors.
2. The sub-goals are to find the different results possible based on matching right and left. Next is to see how many color possibilities there are.

**Identify potential solutions**

1. Select the amount of socks for the wrong hand (10). I assume once all these are drawn I have to draw a matching sock next.
2. Doing the same with color we see that 18 failed draws will give me the possibilities of no matches. So the 19th draw will give me a match