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SDI Sec 02

Problem Solving

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

In order to solve this problem, in which a man is trying to get a cat, parrot, and bag of seed across the river one at a time, without leaving a conflicting pair on one side, can be solved with a well-planned strategy. The first step would be to take the parrot across, leaving the cat and seed, as the cat would not eat the seed. Upon leaving the parrot, the man would return for the seed. When he leaves the seed on the opposite side, he would then take the parrot with him to the starting side of the river. Here he would leave the parrot, and bring with him the cat. After leaving the cat with the seed, he would return back for the parrot, bring it over, and would have successfully brought all three across the river without worry of one eating the other.

1. **Socks in the Dark:**

In this problem you have 20 socks loose in a drawer, in which 10 socks are black, 6 socks are brown and 4 are white. If you were to randomly select socks in an attempt to get a matching pair, select at least 5 socks to get a matching pair. As 50% of the socks are matching black socks, 30% brown and 20% white. 5 socks makes up 1/4th of the amount and guarantees that at least 1 pair of the socks matching. In order to guarantee at matching pair of each color you would need to pick out at least 18 socks, as this is the only way to be certain you have a matching set of each, including the white, which is the least amount.

1. **Predicting Fingers:**

The scenario in which a girl counts down on her hand by finger, 1 to 5 and then the opposite way 6 to 10, ending on the first finger, she will always stop on this finger in every multiple of 10. Whether she counts to 10, 20, 50, 100 or 1000 she will always come back to the first finger.