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

A man finds himself on a riverbank with a cat, a parrot and a bag of seed. He needs to transport all three to the other side of the river in his boat. However, the boat has room for only the man himself and one other item (either the cat, parrot or seed). In his absence, the cat could eat the parrot, and the parrot would eat the bag of seed. Show how he can get all the passengers to the other side, without leaving the wrong ones alone together.

**1) Define Problem**

A man has a Cat, Parrot, and a bag of seed that he needs to get to the other side of the river his boat.

He can only seat himself and one other so he must take them over in a specific order or one will do something to the other.

**2) Break Problem Apart**

Cat and Parrot can’t be left alone; Parrot and Seed can’t be left alone.

Cat will not do anything to the Seed.

**3) Identify Potential solutions**

Take the Parrot First because Cat does nothing to the Seed.

Socks in the Dark:

There are 20 socks in a drawer: 5 pairs of black socks, 3 pairs of brown and 2 pairs of white. You select the socks in the dark and can check them only after a selection has been made. What is the smallest number of socks you need to select to guarantee getting the following:

a) At least one matching pair = **11 socks**

b) At least one matching pair *of each color. =* ***18 socks***

Predicting Fingers:

A little girl counts using the fingers of her left hand as follows: She starts by calling her thumb 1, the first finger 2, middle finder 3, ring finger 4, and little finger 5. Then she reverses direction, calling the ring finger 6, middle finger 7, first finger 8 and thumb 9, after which she calls her first finger 10 and so on. If she continues to count in this manner, on which finger will she stop?

a) What if the girl counts from 1 to 10 = **first finger**

b) What if the girl counts from 1 to 100 = **ring finger**

c) What if the girl counts from 1 to 1000 = **ring finger**