Logic Puzzles

Programming and Web Development Minuteman High School Mr. Lambert

Double Jeopardy Doors

You are trapped in a room with two doors. One leads to certain death and the other leads to freedom. You don't know which is which.

There are two robots guarding the doors. They will let you choose one door but upon doing so you must go through it.

You can, however, ask one robot one question. The problem is one robot always tells the truth, the other always lies and you don't know which is which.

What is the question you ask?

The Boxes

There are three boxes. One is labeled "APPLES" another is labeled "ORANGES". The last one is labeled "APPLES AND ORANGES". You know that each is labeled incorrectly. You may ask me to pick one fruit from one box which you choose.

How can you label the boxes correctly?

The Waiter

Three men in a cafe order a meal the total cost of which is \$15. They each contribute \$5. The waiter takes the money to the chef who recognizes the three as friends and asks the waiter to return \$5 to the men.

The waiter is not only poor at mathematics but dishonest and instead of going to the trouble of splitting the \$5 between the three he simply gives them \$1 each and pockets the remaining \$2 for himself.

Now, each of the men effectively paid \$4, the total paid is therefore \$12. Add the \$2 in the waiters pocket and this comes to \$14.....where has the other \$1 gone from the original \$15?

The Bobber

You can paddle your canoe seven miles per hour through any placid lake. The stream flows at three miles per hour. The moment you start to paddle up stream a fisherman looses one of his bobbers in the water fourteen miles up stream of you. How many hours does it take for you and

the bobber to meet?

Four Gallons

You have a three gallon and a five gallon measuring device. You wish to measure out four gallons.

How do you accomplish the task?

The Cubes

A corporate businessman has two cubes on his office desk. Every day he arranges both cubes so that the front faces show the current day of the month.

What numbers are on the faces of the cubes to allow this?

Flipping Coins

There are twenty coins sitting on the table, ten are currently heads and tens are currently tails. You are sitting at the table with a blindfold and gloves on. You are able to feel where the coins are, but are unable to see or feel if they heads or tails.

You must create two sets of coins. Each set must have the same number of heads and tails as the other group. You can only move or flip the coins, you are unable to determine their current state. How do you create two even groups of coins with

the same number of heads and tails in each group?

Two Children

I ask people at random if they have two children and also if one is a boy born on a Tuesday. After a long search I finally find someone who answers yes.

What is the probability that this person has two boys?

Assume an equal chance of giving birth to either sex and an equal chance to giving birth on any day.

The Card Trick

I ask Alex to pick any 5 cards out of a deck with no Jokers.

He can inspect then shuffle the deck before picking any five cards. He picks out 5 cards then hands them to me (Peter can't see any of this). I look at the cards and I pick 1 card out and give it back to Alex. I then arrange the other four cards in a special way, and give those 4 cards all face down, and in a neat pile, to Peter.

Peter looks at the 4 cards I gave him, and says out loud which card Alex is holding (suit and number). How? The solution uses pure logic, not sleight of hand. All Peter needs to know is the order of the cards and what is on their face, nothing more.