Logic Puzzles

Directions: Work in teams to try and solve each of the logic puzzles. Once the group has settled on an answer make sure everyone in the group understands how that answer was determined. Focus more on the process of collaborating and communicating with each other more than worrying about the right answer.

1. 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?

2. Three Gallons

You have a three gallon bucket, a five gallon bucket, and an endless supply of water. You wish to measure out exactly four gallons. How can you do so?

3. 100 Gold Coins

Five pirates have obtained 100 gold coins and have to divide up the loot. The pirates are all extremely intelligent, treacherous and selfish (especially the captain).

The captain always proposes a distribution of the loot. All pirates vote on the proposal, and if half the crew or more go "Aye", the loot is divided as proposed, as no pirate would be willing to take on the captain without superior force on their side.

If the captain fails to obtain support of at least half his crew (which includes himself), he faces a mutiny, and all pirates will turn against him and make him walk the plank. The pirates start over again with the next senior pirate as captain.

What is the maximum number of coins the captain can keep without risking his life?

4. The 100 Coins

There are 10 sets of 10 coins. You know how much the coins should weigh. You know all the coins in one set of ten are exactly a hundredth of an ounce less than they should be, making the entire set of ten coins a tenth of an ounce off. You also know that all the other coins weigh the correct amount. You are allowed to use an extremely accurate digital weighing machine only once.

How do you determine which set of 10 coins is faulty?

5. Five Gallons

You are mixing cement and the recipe calls for five gallons of water. You have a garden hose giving you all the water you need. The problem is that you only have a four gallon bucket and a seven gallon bucket and neither has graduation marks. Find a method to measure five gallons.

6. 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?