Name:

ID:

BUET CSE DAY - 2016

Logic & Puzzle Contest (Time: 1 hour 15 min)

Segment #A

Cake Thief 6

During a recent police investigation, Chief Inspector Stone was interviewing five local villains to try and identify who stole Mrs. Archer's cake from the mid-summers fayre. Below is a summary of their statements:

```
Arnold: It wasn't Edward, it was Brian.
Brian: It wasn't Charles, it wasn't Edward.
Charles: It was Edward, it wasn't Arnold.
Derek: It was Charles, it was Brian.
Edward: It was Derek, it wasn't Arnold.
```

It was well known that each suspect told exactly one lie. Can you determine who stole the cake?

Alice, Bob, Trudy 6

Alice is having a conversation with her manager Bob about a recent bank transaction. The conversation is confidential, so they are using secret mapping of letter. Trudy, truly the intruder, is eavesdropping their conversation and trying to decode the mapping. Here's what he has got so far.

```
A maps to 1
B maps to 2
E maps to 12
```

Now convert this message to a number: `JACK`

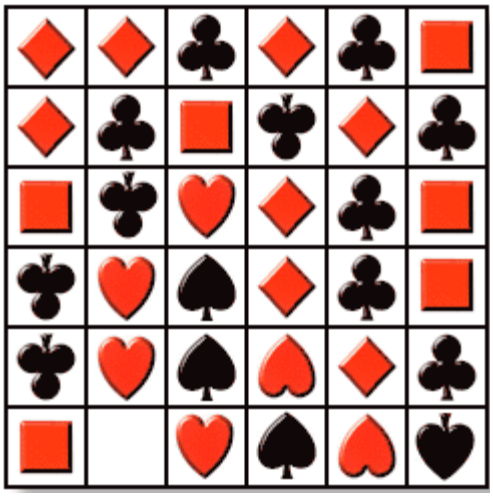
Birthday Problem 6

At a recent birthday party there were four mothers and their children, aged 1, 2, 3 and 4. From the clues below can you work out whose child is whose and their relevant ages?

```
It was Jane's child's birthday party.
Brian is not the oldest child.
Sarah had Anne just over a year ago.
Laura's child will be 3 next birthday.
Daniel is older than Charles.
Teresa's child is the oldest.
Charles is older than Laura's child.
```

The Lost Symbol 6

Find the symbol of the empty square logically.



The Most Intelligent Prince 6

A king wants his daughter to marry the smartest of 3 extremely intelligent young princes, and so the king's wise men devised an intelligence test.

The princes are gathered into a room and seated, facing one another, and are shown 2 black hats and 3 white hats. They are blindfolded, and 1 hat is placed on each of their heads, with the remaining hats hidden in a different room.

The king tells them that the first prince to deduce the color of his hat without removing it or looking at it will marry his daughter. A wrong guess will mean death. The blindfolds are then removed.

You are one of the princes. You see 2 white hats on the other prince's heads. After some time you realize that the other prince's are unable to deduce the color of their hat, or are unwilling to guess. What color is your hat?

Note: You know that your competitors are very intelligent and want nothing more than to marry the princess. You also know that the king is a man of his word, and he has said that the test is a fair test of intelligence and bravery.

Please describe your answer. Without description, the answer is not acceptable.

Two Children 6

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.

Gardens **6**

Five friends have their gardens next to one another, where they grow three kinds of crops: fruits (apple, pear, nut, cherry), vegetables (carrot, parsley, gourd, onion) and flowers (aster, rose, tulip, lily).

1. They grow 12 different varieties.
2. Everybody grows exactly 4 different varieties
3. Each variety is at least in one garden.
4. Only one variety is in 4 gardens.
5. Only in one garden are all 3 kinds of crops.
6. Only in one garden are all 4 varieties of one kind of crops.
7. Pears are only in the two border gardens.
8. Paul's garden is in the middle with no lily.
9. Aster grower doesn't grow vegetables.
10. Rose grower doesn't grow parsley.
11. Nuts grower has also gourd and parsley.
12. In the first garden are apples and cherries.
13. Only in two gardens are cherries.
14. Sam has onions and cherries.
15. Luke grows exactly two kinds of fruit.
16. Tulips are only in two gardens.
17. Apples are in a single garden.
18. Only in one garden next to the Zick's is parsley.
19. Sam's garden is not on the border.
20. Hank grows neither vegetables nor asters.
21. Paul has exactly three kinds of vegetable.

Who has which garden and what is grown where?

Family **6**

Parents with two children, a son and a daughter, came to a wide river. There was no bridge there. The only way to get to the other side was to ask a fisherman if he could lend them his boat. However, the boat could carry only one adult or two children.

How does the family get to the other side and return the boat to the fisherman?

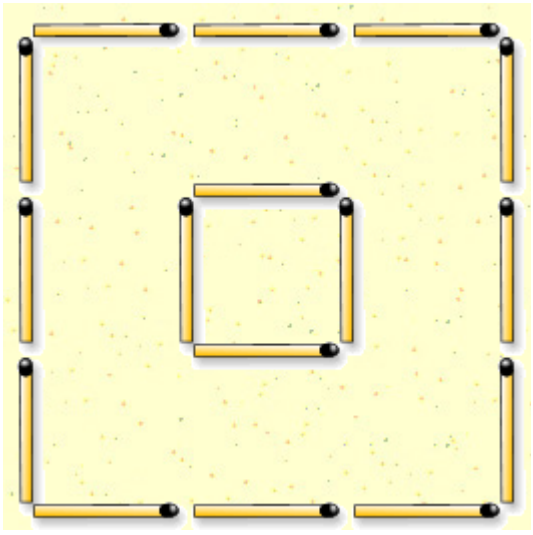
Segment #B

Cork, Bottle, Coin 4

You put a coin in an empty bottle and insert a cork in the bottle's opening. How can you remove the coin without taking out the cork or breaking the bottle?

2 Squares to 3 4

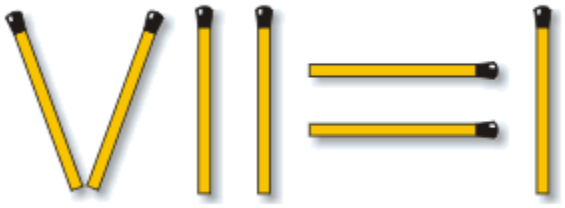
Move 4 matches to make at least 3 squares.
(Just put a cross mark on the matches you want to move and draw them in their new positions. You don't need to redraw the entire picture)



Equation Balance **4**

Arrange matches into the equation shown in the illustration. You can move and rotate only one matchstick, but cannot break it. It can be seen the equation itself is not correct.

There must be an equal sign after the re-arrangement of matches and the equation must be correct.



Largest Number **4**

Write down the largest number using 3 digits.

(Hint: the number is not 999)