Montlake Math Challenge
Montlake Elementary School
October 11, 2007

Instructions: In groups, try to answer as many of these questions as you can.

Question 1: There are three men whose last names are Brown, Smith, and Jones. One of the men is a doctor, one is a lawyer, and one is a teacher. They each earn a different amount of money for their jobs. Also,

1. The teacher, who is an only child, earns the least amount of money.

2. Mr. Smith married Mr. Brown's sister. Mr. Smith also makes more money than the lawyer.

What is each man's job?

Question 2: Mr. Mumbles was registering his three children - Alice, Bob, and Carl - for school. One of the children is going into second grade, one is going into fourth grade, and one is going into seventh grade. When the school secretary asks Mr. Mumbles which child is going into which grade, he gets confused, but he does know the following facts:

1. Either Alice or Bill is my youngest child.

2. If Carl isn't the youngest child, then Alice is the oldest.

The secretary was able to correctly place each child in the correct grade. How did she know?

Question 3: A drawer contains 10 black socks and 10 blue socks, but it is dark and you can't see which socks are black and which socks are blue. What is the smallest number of socks that you can take from the drawer to guarantee that two of the socks you took are the same color?

Question 4: There are three boxes on a table. One of them is labeled APPLES, one is labeled ORANGES, and one is labeled APPLES AND ORANGES. Unfortunately, each of the boxes is mislabeled. You can reach into each of the boxes, but you cannot see what is inside any of them. Is it possible to pick ONE piece of fruit from ONE of the boxes and then correctly relabel all of the boxes?