Name . . . . . , row. .... col....

1. - 3.	4.	5.	Σ.

1a) 1b) 1c)

1d) 2a) 2b)

2c) 2d) 2e)

2f) 3a) 3b)

1. They play 10 movies in a cinema. In how many ways a student can go for 5 movies if:
a) no two movies are the same and the order of the movies is important,
b) no two movies are the same and the order of the movies is not important,
c) any movie can be chosen more then once and the order of the movies is important,
d) any movie can be chosen more then once and the order of the movies is not important.

2. There are 12 birds and 6 trees. In how many ways birds can sit on the trees if
a) birds are different and trees are different,
b) birds are identical and trees are different,
c) birds are identical and trees are identical, there is a bird on every tree,
d) birds are identical and trees are different, there is a bird on every tree,
e) birds are different and trees are different, there is a bird on every tree,
f) there are two birds on every tree.

3. How many sentences with at most 3 words can be made with letters a) c o m p u t e r, b) m a t h e m a t i c s

4. There are 10 rows in a cinema, each with 10 seats. In how many ways 20 people can take seats in such a way that there is at least one person in every row. People are different.

5. Prove by combinatorial argument: $kS(n,k) = \sum_{i=1}^{n} \binom{n}{i} S(n-i, k-1)$.