Matematiska Institutionen
KTH

Homework number 3 to SF2736, fall 2011.

Please, deliver this homework at latest on Tuesday, November 22.

1. (0.2p) In a class consisting of 12 boys and 13 girls a committee consisting of five children has to be chosen. In how many ways can this be done if the boy B refuses to attend if the boy P attends the committee, and the girl F must attend if the girl G attends.

2. (0.2p) Find the number of 4-tuples (x_1, x_2, x_3, x_4) of non negative integers that satisfy the relation

$$5 \leq x_1 + x_2 + x_3 + x_4 \leq 15$$

   The answer must be given as an integer.

3. (0.2p) Find the coefficient of $x^2 y^3 z$ in the polynomial

$$(x + 4y - az + 3)^{17}$$

4. (0.2p) Find the number of words of length 12 consisting of four a's, four b's and four c's with the property that no two a's are adjacent.

5. (0.2p) Find the number of words of length 8 in the letters a, b and c with the property that every word contains at least one a, at least one b and at least one c.