

March 29, 2012

1. How many strings are there of four lowercase letters that have the letter x in them?
2. How many strings are there that are made using either three digits followed by three uppercase letters or three uppercase letters followed by three digits?
3. A palindrome is a string whose reversal is identical to the string. How many bit strings of length n are palindromes?
4. How many subsets with an odd number of elements does a set with 10 elements have?
5. A test is written with 40 True/false questions with 17 being true. If the questions can be positioned in any order, how many different answer keys are possible?

6. Seven women and nine men are on the faculty in the math department at a school.
- (a) How many ways are there to select a committee of five members from the department if at least one woman must be on the committee?
 - (b) How many ways are there to select a committee of five members from the department if at least one woman and at least one man must be on the committee?
7. Find the coefficient of x^5y^8 in $(x + y)^{13}$