Python Merit Badge Assessment
Some questions from 2013 SMCM Code Golf Competition

Instructions: do each of the following and submit to your instructor. For all code questions, provide a separate .py file named qn.py where n is the question number. For instance the solution for question 2 should be in a file called q2.py.

1.) Describe how Python is used in embedded and rapid electronics prototyping. Identify two specific uses and provide references.
2.) Give the code to create a list of even numbers from 0 to 2000, inclusive, in 34 or fewer characters. Do not count the method signature as part of the 34 characters.
3.) Given an array that contains some subset of the natural numbers, one of the natural numbers is repeated. The array is in no given order. Write a method to determine the repeated number (the array will be passed in as a parameter). Do this in 52 or fewer characters.
4.) Write a method that takes an ASCII encoded string as a parameter that contains only 1's and 0's, and returns a string consisting of only 2's and 1's such that each 2 corresponds to a 1 in the original string and each 1 corresponds to a 0. For instance on method call q4("10101") it will return "21212". Do this in 47 or fewer characters.
5.) Write a method that takes in two integers, n and k as parameters. The method should return an int that's equal to n*2^k. You can assume all intermediate steps and the result will fit in an int. For instance, for a method call q5(5, 10) the method should return 5120. Do this in 18 or fewer characters.
6.) Write an interpreter for the brainf*ck language. Input will be passed to the method via a string parameter of ASCII characters and may be up to 30,000 characters in length. Input and output should be executed as specified by the brainf*ck language. You do not need to accommodate for nested loops. Do this in 320 or fewer characters.