For the following four problems write a complete algorithm. Also make sure include the three step analysis part to receive full credit.

1) All years that are evenly divisible by 400 are always a leap year. They are also a leap year if they are evenly divisible by 4 AND are not evenly divisible by 100. For example, 1600 was a leap year because it is evenly divisible by 400. Likewise 1988 was a leap year because it was evenly divisible by 4 AND not evenly divisible by 100. Write an algorithm to solve this problem for entering any year, providing a positive integer.

2) A store is having a sale on shirts. The shirts cost $15.75 individually, but if four to ten shirts are bought they are only $12.50 a shirt, and if more than ten are purchased then they cost only $8 a shirt. Have the problem calculate the price for all the shirts, the sales tax (at 6%), and the total price based on the number of shirts purchased. Also make sure to display all the data, i.e. shirts sold, price of shirts, sales tax and total price.

3) Solve a problem that has the user continually entering integers, one at a time, and assume these integers are in the range of 0 to 10, but don’t test for this, and calculates their sum until the sum is over 35. When done the sum and last numbered entered should be displayed. You will need to use a loop of some kind for this one.

4) A problem that has a user enter positive numbers and keeps record of how many even numbers are entered. When user enters 0 problem stops and then displays the number of even numbers entered. For example, if user enters 3, 56, 4, 13, 779, 46 and 0, then problem would display something like “User entered 3 even numbers”. You need to use a loop structure for this one.