Do as many as you can of the following problems. Do them in order.

1. We will say that a number is a palindrome if it reads the same forwards and backwards. So:
   - 1221 is a palindrome
   - 6556 is a palindrome
   - 1234 is not a palindrome

Write a program that inputs a four digit integer and determines if the number is a palindrome or not.
Your program should reject (politely) any input not in the appropriate range.

2. Write a program to ask the user for a purchase amount and print, the amount and the discount according to the following rule:
   1. No discount if the purchase amount is under $100.
   2. 10% off on the complete purchase amount if purchase amount is greater than or equal to $100.

3. Write a program to ask the user for a purchase amount and print, the amount and the discount according to the following rule:
   1. No discount if the purchase amount is under $100.
   2. 10% off on **everything above $100** if the purchase amount is greater or equal to $100.

4. Write a program to ask the user for a purchase amount and print, the amount and the discount according to the following rule:
   1. No discount if the purchase amount is under $100.
   2. 10% off on **everything from $100 and above** if the purchase amount is greater or equal to $100 but less than $1000.
   3. 15% off on **everything from $100 and above** if the purchase amount is greater or equal to $1,000 but less than $2000.
   4. 20% off on **everything from $100 and above** if the purchase amount is greater or equal to $2,000.

5. Write a program that keeps asking the user for an integer until they enter the string ‘done’. At that point have you program print the value of the largest integer entered by the user.

6. Write a program that prints out the numbers 1 and 100, ten numbers per line.

7. Write a program that asks the user for a positive integer, n, where n is less than or equal to 1000. Print out all the odd integers between 1 and n, ten numbers per line.

8. Write a program that asks the user for a positive integer, n, where n is less than or equal to 1000. Print out all the leap years between 1 and n, ten numbers per line.

9. Write a program to input an integer n, and output the sum of its digits.