Decision and While Loop Questions

1. Guess the results of the following statements (note: there are a couple of tricks, you may need to import something to avoid receiving an error message):

    a) 1==2
    b) 1=2
    c) 1<2
    d) pi == 3.141592
    e) 1 = True
    f) 1 == True
    g) 0 == False

2. Write a program that allows the user to enter a positive integer. If this number is even, print out its square. If it is odd, print out its cube. Hint: user input should be converted to an int; consider the int() method.
3. Write a program that allows the user to enter two positive integers. If one number divides the other, print "yes", otherwise print "no".
4. Write a program that initializes a list L with integer entries (make it as long as you like and the entries can be arbitrary). Ask the user for input. If the user inputs something that is an element of the list, remove it from the list and print out the edited list. If the user inputs something that is not an element of the list, print out the list without editing it.
5. Similarly to activity 4 and 5, take an inputed number and make a program that will print out whether it is odd/even, bigger/less than 100, zero/non-zero, negative/positve.
6. Create two of your very own infinite loops and explain why they'll be infinte.
7. Create a conversion program that takes two user inputs: a number and a unit of mass ('kg', 'lb') in string form. Tell the user using the input function what they must enter and in what format. Make a program that takes a value and a unit, converts it to the other unit and then prints the result.
    ex// say the user inputs 5 and 'lb'; your program would return '5 lb is xxx kg'
    For some extra work instead of using only units of mass make the input any metric unit or any imperial unit and convert to the other system
    ex// metres to yards, etc...
8. Make a guessing game of your own similar to activity 7, but that guesses two numbers, not just one.
9. Create a program that counts from 0 to 25 and then back down to 0. Each time you add a number have the program print the number it is at. This program should be no more than 10 lines.
10. Use all you know from "Decisions and While Loops" and create a program that can take a string as user input and return that string backwards. You may need to use a string specific method of the form string.method(). (Hint: if your string is s, and s = "Alpha" then s[0] = "A", s[1] = "l", s[2] = "p" ... you could either create a new string with this or alter s right away. Also do not use a palindrome as user input to test your program, it could result in you getting a headache). (Challenge: if you're good with the help function you may be able to find a way to do this question in no more than 3 lines)