1. Write a Python program to check if the given number is a Disarium Number?

import math

# Method to check whether a number is disarium or not

def check(n) :

    # Count digits in n.

    count\_digits = len(str(n))

    # Compute sum of terms like digit multiplied by

    # power of position

    sum = 0  # Initialize sum of terms

    x = n

    while (x!=0) :

        # Get the rightmost digit

        r = x % 10

        # Sum the digits by powering according to

        # the positions

        sum = (int) (sum + math.pow(r, count\_digits))

        count\_digits = count\_digits - 1

        x = x/10

    # If sum is same as number, then number is

    if sum == n :

        return 1

    else :

        return 0

# Driver method

n = 135

if (check(n) == 1) :

    print "Disarium Number"

else :

    print "Not a Disarium Number"

Write a Python program to print all disarium numbers between 1 to 100?

Write a Python program to check if the given number is Happy Number?

A Happy Number n is defined by the following process. Starting with n, replace it with the sum of the squares of its digits, and repeat the process until n equals 1, or it loops endlessly in a cycle which does not include 1. Those numbers for which this process ends in 1 are Happy Numbers, while those that do not end in 1 are unhappy numbers.  
First few happy numbers are 1, 7, 10, 13, 19, 23, 28, 31, 32, 44, 49, 68, 70, 79, 82, 86, 91, 94, 97, 100

22 + 32 = 4 + 9 = 13

def isHappy(n) :

    # Keep replacing n with

    # sum of squares of digits

    # until we either reach 1

    # or we end up in a cycle

    while (1) :

        # Number is Happy if

        # we reach 1

        if (n == 1) :

            return True

        # Replace n with sum of

        # squares of digits

        n = sumDigitSquare(n)

        # Number is not Happy

        # if we reach 4

        if (n == 4) :

            return False

    return False

n = 23

if (isHappy(n)) :

    print("Yes")

else :

    print("No")

Write a Python program to print all happy numbers between 1 and 100?

Write a Python program to determine whether the given number is a Harshad Number?

An integer number in base 10 which is divisible by the sum of its digits is said to be a Harshad Number. An *n-harshad* number is an integer number divisible by the sum of its digit in base *n*.  
Below are the first few Harshad Numbers represented in base 10:  
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 18, 20………  
Given a number in base 10, our task is to check if it is a Harshad Number or not.

def checkHarshad( n ) :

    sum = 0

    temp = n

    while temp > 0 :

        sum = sum + temp % 10

        temp = temp // 10

    # Return true if sum of

    # digits is multiple of n

    return n % sum == 0

# Driver Code

if(checkHarshad(12)) : print("Yes")

else : print ("No")

if (checkHarshad(15)) : print("Yes")

else : print ("No")

Write a Python program to print all pronic numbers between 1 and 100?

The numbers that can be arranged to form a rectangle are called Rectangular Numbers (also known as Pronic numbers). The first few rectangular numbers are:   
0, 2, 6, 12, 20, 30, 42, 56, 72, 90, 110, 132, 156, 182, 210, 240, 272, 306, 342, 380, 420, 462 . . . . . .   
Given a number n, find n-th rectangular number.

def findRectNum(n):

return n\*(n + 1)

# Driver code

n = 6

print (findRectNum(n))