**Find amstrong numbers**

**1.  
def** amsrtong(n):  
 sum=**0** ams=n  
 **while** n>**0**:  
 x=n%**10** *# y=x\*x\*x* sum=sum+(x\*x\*x)  
 n=n//**10** print(sum)  
 **if** sum==ams:  
 print(**'Its a ASTRONG NUMBER'**)  
 **else**:  
 print(**'not'**)  
  
num=int(input(**'number'**))  
amsrtong(num)

Output

number>? 153

153

*Its a ASTRONG NUMBER*

* ***153*** *is an Armstrong number because: 1\*1\*1+5\*5\*5+3\*3\*3=1+125+27=153*
* **9474** is a 4-digit number, so each digit is raised to the power of 4.

2.

**def** is\_armstrong(number):  
 *# Convert the number to a string to easily iterate over digits* digits = str(number)  
 num\_digits = len(digits)  
  
 *# Calculate the sum of the digits each raised to the power of num\_digits* sum\_of\_powers = sum(int(digit) \*\* num\_digits **for** digit **in** digits)  
  
 *# Check if the sum of powers equals the original number* **return** sum\_of\_powers == number  
  
  
*# Input number*num = int(input(**"Enter a number: "**))  
  
*# Check and display result***if** is\_armstrong(num):  
 print(**f"**{num} **is an Armstrong number."**)  
**else**:  
 print(**f"**{num} **is not an Armstrong number."**)

3.

**def** is\_armstrong(number):  
 digits = str(number)  
 num\_digits = len(digits)  
 sum\_of\_powers = sum(int(digit) \*\* num\_digits **for** digit **in** digits)  
 **return** sum\_of\_powers == number  
  
*# Check for the number 9474*num = **9474  
  
if** is\_armstrong(num):  
 print(**f"**{num} **is an Armstrong number."**)  
**else**:  
 print(**f"**{num} **is not an Armstrong number."**)